INDEX TO AUTHORS

AGNELLO, V., KOFFLER, D., EISENBERG, J. W., WINCHESTER, R. J., and KUNKEL, H. G. C1q precipitins in the sera of patients with systemic lupus erythematosus and other hypocomplementemic states: characterization of high and low molecular weight types, 228 s

—. See KOFFLER, AGNELLO, THOBURN, and KUNKEL, 169 s

—. See KOFFLER, CARR, AGNELLO, THOBURN, and KUNKEL, 294

—. See WINCHESTER, KUNKEL, and AGNELLO, 286 s

AREND, WILLIAM P. See MANNIK and AREND, 19 s

ARMSTRONG, J. A., and HART, P. D'ARCY. Response of cultured macrophages to *Mycobacterium tuberculosis*, with observations on fusion of lysosomes with phagosomes, 713

ARROYAVE, CARLOS M. See ZIMMERMAN, ARROYAVE, and MÜLLER-EBERHARD, 1591

ASOFSKY, RICHARD. See PIERCE, JOHNSON, GERSHON, AND ASOFSKY, 395

AUSTEN, K. FRANK. See GIGLI, KAPLAN, and AUSTEN, 1466

—. See ORANGE, AUSTEN, and AUSTEN, 136 s

—. See RUDDY, EVERSON, SCHUR, and AUSTEN, 259 s

AUSTEN, W. GERALD. See ORANGE, AUSTEN, and AUSTEN, 136 s

AUSTRIAN, ROBERT. See SCHIFFMAN, BORNSTEIN, and AUSTRIAN, 600

BAEZ, SILVIO, and GORDON, HELMUT A. Tone and reactivity of vascular smooth muscle in germ-free rat mesentery, 846

BAINTON, DOROTHY FORD, ULLYOT, JOAN L., and FARQUHAR, MARILYN G. The development of neutrophilic polymorphonuclear leukocytes in human bone marrow. Origin and content of azurophil and specific granules, 907

BANKHURST, ARTHUR D., WARNER, NOEL L., and SPRENT, JOHN. Surface immunoglobulins on thymus and thymus-derived lymphoid cells, 1005

BASTEN, ANTONY. See FELDMANN and BASTEN, 103

—. See MILLER, SPRENT, BASTEN, WARNER, BREITNER, ROWLAND, HAMILTON, SILVER, and MARTIN, 1266

BATTISTO, JACK R., BUDMAN, DANIEL, and FREEDMAN, ROBERT. Specificity of fixation loci for homocytotropic antibodies, 381

BAUMAL, REUBEN, POTTER, MICHAEL, and SCHARFF, MATTHEW D. Synthesis, assembly, and secretion of gamma globulin by mouse myeloma cells. III. Assembly of the three subclasses of IgG, 1316

BAUR, SONIA. See VITETTA, BAUR, and UHR, 242

BEACHEY, EDWIN H., and STOLLERMAN, GENE H. Toxic effects of streptococcal M protein on platelets and polymorphonuclear leukocytes in human blood, 351

BENACERRAF, BARUJ. See BLUESTEIN, ELLMAN, GREEN, and BENACERRAF, 1529

—. See BLUESTEIN, GREEN, and BENACERRAF, 458, 471, 1538

—. See KATZ, DAVIE, PAUL, and BENACERRAF, 201

BENNETT, MICHAEL. See CUDKOWICZ and BENNETT, 83, 1513
BERLIN, RICHARD D. See TSAN and BERLIN, 1016
BIRD, COLIN, and HUGGINS, CHARLES. Leukemia evoked with 7,8,12-trimethylbenz(a)anthracene in rat. I. Changes in spleen and thymus, 1285
BLAKE, J. THOMAS. See ROSENSTREICH, BLAKE, and ROSENTHAL, 1170
BLUESTEIN, HARRY G., ELLMAN, LEONARD, GREEN, IRA, and BENACERRAF, BARUJ. Specific immune response genes of the guinea pig. III. Linkage of the GA and GT immune response genes to histocompatibility genotypes in inbred guinea pigs, 1529
—. GREEN, IRA, and BENACERRAF, BARUJ. Specific immune response genes of the guinea pig. I. Dominant genetic control of immune responsiveness to copolymers of L-glutamic acid and L-alanine and L-glutamic acid and L-tyrosine, 458
—, —, and —. II. Relationship between the poly-L-lysine gene and the genes controlling immune responsiveness to copolymers of L-glutamic acid and L-alanine and L-glutamic acid and L-tyrosine in random-bred Hartley guinea pigs, 471
—, —, and —. IV. Demonstration in random-bred guinea pigs that responsiveness to a copolymer of L-glutamic acid and L-tyrosine is predicated upon the possession of a distinct strain 13 histocompatibility specificity, 1538
BLUMBERG, BARUCH S., MILLMAN, IRVING, SUTNICK, ALTON I., and LONDON, W. THOMAS. The nature of Australia antigen and its relation to antigen–antibody complex formation, 320 s
BODLUND, KERSTIN. See CELADA, ELLIS, BODLUND, and ROTMAN, 751
BOMBARDIERI, STEPHENO. See GOCKE, HSU, MORGAN, BOMBARDIERI, LOCKSHIN, and CHRISTIAN, 330 s
BOREL, YVES. See GOLAN and BOREL, 1046
BORNSTEIN, DONALD L. See SCHIFFMAN, BORNSTEIN, and AUSTRIAN, 600
BOYSE, EDWARD A. See TAKAHASHI, OLD, MCINTIRE, and BOYSE, 815
BRAUN, DIETMAR G. See EICHMANN, BRAUN, and KRAUSE, 48
BREITNER, J. C. S. See MILLER, SPRENT, BASTEN, WARNER, BREITNER, ROWLAND, HAMILTON, SILVER, and MARTIN, 1266
BRUNNER, K. T. See CEROTTINI, NORDIN, and BRUNNER, 553
BUDMAN, DANIEL. See BATTISTO, BUDMAN, and FREEDMAN, 381

CANNON, FRANCES D. See DAUSSET, RAPAPORT, CANNON, and FERREBEE, 1222
CARLSSON, HANS ERIK. See HAMMARSTRÖM, CARLSSON, PERLMANN, and SVENSSON, 565
CARR, R. See KOFFLER, CARR, AGNELLO, THOBURN, and KUNKEL, 294
CEBRA, JOHN J. See CRAIG and CEBRA, 188
CELADA, FRANCO, ELLIS, JOHN, BODLUND, KERSTIN, and ROTMAN, BORIS. Antibody-mediated activation of a defective β-D-galactosidase. II. Immunological relationship between the normal and the defective enzyme, 751
CEROTTINI, J.-C., NORDIN, A. A., and BRUNNER, K. T. Cellular and humoral response to transplantation antigens. I. Development of alloantibody-forming cells and cytotoxic lymphocytes in the graft-*versus*-host reaction, 553
CHAPMAN, J. See MCARTHUR, CHAPMAN, and THORBECKE, 1036
CHRISTIAN, CHARLES L. See GOCKE, HSU, MORGAN, BOMBARDIERI, LOCKSHIN, and CHRISTIAN, 330 s

CHUSED, THOMAS M. See TALAL, STEINBERG, JACOBS, CHUSED, and GAZDAR, 52 s
CINADER, BERNARD. See WU and CINADER, 693
CLIFF, W. J. See HOBBS and CLIFF, 963
COCHRANE, CHARLES G. Mechanisms involved in the deposition of immune complexes in tissues, 75 s
— and WUEPPER, K. D. The first component of the kinin-forming system in human and rabbit plasma. Its relationship to clotting factor XII (Hageman factor), 986
COHN, ZANVIL. See GORDON and COHN, 935, 947
—. See GORDON, RIPPS, and COHN, 1187
—. See WERB and COHN, 1545, 1570
CONE, ROBERT E., MARCHALONIS, JOHN J., and ROLLEY, RONALD T. Lymphocyte membrane dynamics. Metabolic release of cell surface proteins, 1373
COSTELLO, RICHARD, IZUMI, TAKATERU, and SAKURAMI, TAKEHIKO. Behavior of attenuated mycobacteria in organs of neonatal and adult mice, 366
CRAIG, SUSAN W., and CEBRA, JOHN J. Peyer's patches: an enriched source of precursors for IgA-producing immunocytes in the rabbit, 188
CUDKOWICZ, GUSTAVO. Genetic control of bone marrow graft rejection. I. Determinant-specific difference of reactivity in two pairs of inbred mouse strains, 281
— and BENNETT, MICHAEL. Peculiar immunobiology of bone marrow allografts. I. Graft rejection by irradiated responder mice, 83
— and —. II. Rejection of parental grafts by resistant F_1 hybrid mice, 1513

DAJANI, ADNAN S., and WANNAMAKER, LEWIS W. Experimental infection of the skin in the hamster simulating human impetigo. III. Interaction between staphylococci and Group A streptococci, 588
DAUSSET, JEAN, RAPAPORT, FELIX T., CANNON, FRANCES D., and FERREBEE, JOSEPH W. Histocompatibility studies in a closely bred colony of dogs. III. Genetic definition of the DL-A system of canine histocompatibility, with particular reference to the comparative immunogenicity of the major transplantable organs, 1222
DAVID, JOHN R. See SCHLOSSMAN, LEVIN, ROCKLIN, and DAVID, 741
DAVIE, JOSEPH M., and PUAL, WILLIAM E. Receptors on immunocompetent cells. II. Specificity and nature of receptors on dinitrophenylated guinea pig albumin-^{125}I–binding lymphocytes of normal guinea pigs, 495
—, ROSENTHAL, ALAN S., and PAUL, WILLIAM E. III. Specificity and nature of receptors on dinitrophenylated guinea pig albumin-^{125}I–binding cells of immunized guinea pigs, 517
—. See KATZ, DAVIE, PAUL, and BENACERRAF, 201
DAVIS, N. C. See SPITZER, STITZEL, PAULING, DAVIS, and WEST, 656
DEFENDI, V. See MAUEL and DEFENDI, 335
DIXON, FRANK J., OLDSTONE, MICHAEL B. A., and TONIETTI, GIORGIO. Pathogenesis of immune complex glomerulonephritis of New Zealand mice, 65 s
—. See OLDSTONE and DIXON, 32 s
—. See WILSON and DIXON, 7 s
DUTTON, RICHARD W. See KAPPLER, HOFFMANN, and DUTTON, 577
—. See LESLEY, KETTMAN, and DUTTON, 618

EDGINGTON, THOMAS S., and RITT, DONALD J. Intrahepatic expression of serum hepatitis virus-associated antigens, 871

EICHMANN, KLAUS, BRAUN, DIETMAR G., and KRAUSE, RICHARD M. Influence of genetic factors on the magnitude and the heterogeneity of the immune response in the rabbit, 48

— and KINDT, THOMAS J. The inheritance of individual antigenic specificities of rabbit antibodies to streptococcal carbohydrates, 532

EISENBERG, J. W. See AGNELLO, KOFFLER, EISENBERG, WINCHESTER, and KUNKEL, 228 s

ELLIS, JOHN. See CELADA, ELLIS, BODLUND, and ROTMAN, 751

ELLMAN, LEONARD, GREEN, IRA, JUDGE, FRANCIS, and FRANK, MICHAEL M. In vivo studies in C4-deficient guinea pigs, 162

—. See BLUESTEIN, ELLMAN, GREEN, and BENACERRAF, 1529

—. See FRANK, MAY, GAITHER, and ELLMAN, 176

ELSBACH, PETER. See SIMBERKOFF and ELSBACH, 1417

ESKELAND, TROND, KLEIN, EVA, INOUE, MASAHARU, and JOHANSSON, BO. Characterization of immunoglobulin structures from the surface of chronic lymphocytic leukemia cells, 265

EVERLY, WILLIAM. See ROTTA, KRAUSE, LANCEFIELD, EVERLY, and LACKLAND, 1298

EVERSON, LLOYD K. See RUDDY, EVERSON, SCHUR, and AUSTEN, 259 s

FARQUHAR, MARILYN G. See BAINTON, ULLYOT, and FARQUHAR, 907

FELDBUSH, T. L., and GOWANS, J. L. Antigen modulation of the immune response. The effect of delayed challenge on the affinity of anti-dinitrophenylated bovine gamma globulin antibody produced in adoptive recipients, 1453

FELDMAN, JOSEPH D. See TUBERGEN and FELDMAN, 1144

FELDMAN, MICHAEL. See GINSBURG, HOLLANDER, and FELDMAN, 1062

FELDMANN, MARC, and BASTEN, ANTONY. The relationship between antigenic structure and the requirement for thymus-derived cells in the immune response, 103

FERREBEE, JOSEPH W. See DAUSSET, RAPAPORT, CANNON, and FERREBEE, 1222

FISH, ALFRED J. See MICHAEL, WESTBERG, FISH, and VERNIER, 208 s

FONG, JACK S. C., and GOOD, ROBERT A. Prevention of the localized and generalized Shwartzman reactions by an anticomplementary agent, cobra venom factor, 642

FOX, DIANNE H. See WILSON and FOX, 857

FRANK, MICHAEL M., MAY, JOSEPH, GAITHER, THELMA, and ELLMAN, LEONARD. In vitro studies of complement function in sera of C4-deficient guinea pigs, 176

—. See ELLMAN, GREEN, JUDGE, and FRANK, 162

FREEDMAN, ROBERT. See BATTISTO, BUDMAN, and FREEDMAN, 381

FUJI, H. See MILGROM, KLASSEN, and FUJI, 193 s

GAITHER, THELMA. See FRANK, MAY, GAITHER, and ELLMAN, 176

GAZDAR, ADI F. See TALAL, STEINBERG, JACOBS, CHUSED, and GAZDAR, 52 s

GELB, NANCY A. See SONG, MOSES, ROSENTHAL, GELB, and KAPPAS, 1349

GERSHON, HARRIET E. See PIERCE, JOHNSON, GERSHON, and ASOFSKY, 395

GIGLI, IRMA, KAPLAN, ALLEN P., and AUSTEN, K. FRANK. Modulation of function of the activated first component of complement by a fragment derived from serum. I. Effect on early components of complement, 1466

GINSBURG, HAIM, HOLLANDER, NURIT, and FELDMAN, MICHAEL. The development of hypersensitive lymphocytes in cell culture, 1062

GOCKE, DAVID J., HSU, KONRAD, MORGAN, COUNCILMAN, BOMBARDIERI, STEPHENO, LOCKSHIN, MICHAEL, and CHRISTIAN, CHARLES L. Vasculitis in association with Australia antigen, 330 s

GOLAN, DOV THEO, and BOREL, YVES. Nonantigenicity and immunologic tolerance: the role of the carrier in the induction of tolerance to the hapten, 1046

GOLDSTEIN, IRA M. See WEISSMANN, ZURIER, SPIELER, and GOLDSTEIN, 149 s

GOLSTEIN, PIERRE, SVEDMYR, ERIK A. J., and WIGZELL, HANS. Cells mediating specific in vitro cytotoxicity. I. Detection of receptor-bearing lymphocytes, 1385

GOOD, ROBERT A. See FONG and GOOD, 642

GORCZYNSKI, R. M., MILLER, R. G., and PHILLIPS, R. A. In vivo requirement for a radiation-resistant cell in the immune response to sheep erythrocytes, 1201

GORDON, HELMUT A. See BAEZ and GORDON, 846

GORDON, SAIMON, and COHN, ZANVIL. Macrophage–melanoma cell heterokaryons. III. The activation of macrophage DNA synthesis. Studies with inhibitors of protein synthesis and with synchronized melanoma cells, 935

— and —. IV. Unmasking the macrophage-specific membrane receptor, 947

—, RIPPS, CAROLYN S., and COHN, ZANVIL. The preparation and properties of macrophage–L cell hybrids, 1187

GOTSCHLICH, EMIL C. See SWANSON, KRAUS, and GOTSCHLICH, 886

GÖTZE, OTTO, and MÜLLER-EBERHARD, HANS J. The C3-activator system: an alternate pathway of complement activation, 90 s

GOWANS, J. L. See FELDBUSH and GOWANS, 1453

GREEN, IRA. See BLUESTEIN, ELLMAN, GREEN, and BENACERRAF, 1529

—. See BLUESTEIN, GREEN, and BENACERRAF, 458, 471, 1538

—. See ELLMAN, GREEN, JUDGE, and FRANK, 162

GRIMLEY, PHILIP M. See SULLIVAN, GRIMLEY, and METZGER, 1403

GUDAT, FRED G., HARRIS, T. N., HARRIS, SUSANNA, and HUMMELER, KLAUS. Studies on antibody-producing cells. III. Identification of young plaque-forming cells by thymidine-^{3}H labeling, 1155

HAMILTON, J. See MILLER, SPRENT, BASTEN, WARNER, BREITNER, ROWLAND, HAMILTON, SILVER, and MARTIN, 1266

HAMMARSTRÖM, STEN, CARLSSON, HANS ERIK, PERLMANN, PETER, and SVENSSON, SIGFRID. Immunochemistry of the common antigen of Enterobacteriaceae (Kunin). Relation to lipopolysaccharide core structure, 565

HARRIS, SUSANNA. See GUDAT, HARRIS, HARRIS, and HUMMELER, 1155

HARRIS, T. N. See GUDAT, HARRIS, HARRIS, and HUMMELER, 1155

HART, P. D'ARCY. See ARMSTRONG and HART, 713

HENNEY, CHRISTOPHER S. See WALDMAN and HENNEY, 482

HENSON, PETER M. Interaction of cells with immune complexes: ad-

herence, release of constituents, and tissue injury, 114 s

HOBBS, J. B., and CLIFF, W. J. Observations on tissue grafts established in rabbit ear chambers. A combined light and electron microscopic study, 963

HOFFMANN, MICHAEL. See KAPPLER, HOFFMANN, and DUTTON, 577

HOLLANDER, NURIT. See GINSBURG, HOLLANDER, and FELDMAN, 1062

HSU, KONRAD. See GOCKE, HSU, MORGAN, BOMBARDIERI, LOCKSHIN, and CHRISTIAN, 330 s

HUGGINS, CHARLES. See BIRD and HUGGINS, 1285

HUMMELER, KLAUS. See GUDAT, HARRIS, HARRIS, and HUMMELER, 1155

HURD, ERIC R., KINSELLA, T. DOUGLAS, and ZIFF, MORRIS. Immunohistologic studies of synoviocytes and synovial exudate cells, 296 s

INOUE, MASAHARU. See ESKELAND, KLEIN, INOUE, and JOHANSSON, 265

IZUMI, TAKATERU. See COSTELLO, IZUMI, and SAKURAMI, 366

JACOBS, MICHAEL E. See TALAL, STEINBERG, JACOBS, CHUSED, and GAZDAR, 52 s

JENKINS, V. K. See MCGARRY, SPEIRS, JENKINS, and TRENTIN, 801

JOHANSSON, BO. See ESKELAND, KLEIN, INOUE, and JOHANSSON, 265

JOHNSON, BARBARA M. See PIERCE, JOHNSON, GERSHON, and ASOFSKY, 395

JUDGE, FRANCIS. See ELLMAN, GREEN, JUDGE, and FRANK, 162

KABAT, ELVIN A. See MORENO, LUNDBLAD, and KABAT, 439

KAPLAN, ALLEN P. See GIGLI, KAPLAN, and AUSTEN, 1466

KAPPAS, ATTALLAH. See SONG, MOSES, ROSENTHAL, GELB, and KAPPAS, 1349

KAPPLER, JOHN W., HOFFMANN, MICHAEL, and DUTTON, RICHARD W. Regulation of the immune response. I. Differential effect of passively administered antibody on the thymus-derived and bone marrow–derived lymphocytes, 577

KATZ, DAVID H., DAVIE, JOSEPH M., PAUL, WILLIAM E., and BENACERRAF, BARUJ. Carrier function in anti-hapter antibody responses. IV. Experimental conditions for the induction of hapten-specific tolerance or for the stimulation of anti-hapten anamnestic responses by "nonimmunogenic" hapten-polypeptide conjugates, 201

KETTMAN, J. R. See LESLEY, KETTMAN, and DUTTON, 618

KINDT, THOMAS J. See EICHMANN and KINDT, 532

KINSELLA, T. DOUGLAS. See HURD, KINSELLA, and ZIFF, 296 s

KLASSEN, J. See MILGROM, KLASSEN, and FUJI, 193 s

KLEIN, EVA. See ESKELAND, KLEIN, INOUE, and JOHANSSON, 265

KLEIN, WILLIAM J., JR. Lymphocyte-mediated cytotoxicity in vitro. Effect of enhancing antisera, 1238

KOFFLER, D., AGNELLO, V., THOBURN, R., and KUNKEL, H. G. Systemic lupus erythematosus: prototype of immune complex nephritis in man, 169 s

—, CARR, R., AGNELLO, V., THOBURN, R., and KUNKEL, H. G. Antibodies to polynucleotides in human sera: antigenic specificity and relation to disease, 294

—. See AGNELLO, KOFFLER, EISENBERG, WINCHESTER, and KUNKEL, 228 s

KRAUS, STEPHEN J. See SWANSON, KRAUS, and GOTSCHLICH, 886

KRAUSE, RICHARD M. See EICHMANN, BRAUN, and KRAUSE, 48
—. See ROTTA, KRAUSE, LANCEFIELD, EVERLY, and LACKLAND, 1298
KUNKEL, H. G. See AGNELLO, KOFFLER, EISENBERG, WINCHESTER, and KUNKEL, 228 s
—. See KOFFLER, AGNELLO, THOBURN, and KUNKEL, 169 s
—. See KOFFLER, CARR, AGNELLO, THOBURN, and KUNKEL, 294
—. See WINCHESTER, KUNKEL, and AGNELLO, 286 s

LACKLAND, HENRY. See ROTTA, KRAUSE, LANCEFIELD, EVERLY, and LACKLAND, 1298
LANCE, EUGENE M. See ZATZ and LANCE, 224
LANCEFIELD, REBECCA C. See ROTTA, KRAUSE, LANCEFIELD, EVERLY, and LACKLAND, 1298
LESLEY, J. F., KETTMAN, J. R., and DUTTON, R. W. Immunoglobulins on the surface of thymus-derived cells engaged in the initiation of a humoral immune response, 618
LEVERE, RICHARD D. See MIZOGUCHI and LEVERE, 1501
LEVIN, HOWARD A. See SCHLOSSMAN, LEVIN, ROCKLIN, and DAVID, 741
LEVINE, BERNARD B. See VAZ, PHILLIPS-QUAGLIATA, LEVINE, and VAZ, 1335
LEWIS, ROBERT M., and SCHWARTZ, ROBERT S. Canine systemic lupus erythematosus. Genetic analysis of an established breeding colony, 417
LINDENMANN, JEAN. See RAMSEIER and LINDENMANN, 1083
LOCKSHIN, MICHAEL. See GOCKE, HSU, MORGAN, BOMBARDIERI, LOCKSHIN, and CHRISTIAN, 330 s
LONDON, W. THOMAS. See BLUMBERG, MILLMAN, SUTNICK, and LONDON, 320 s
LUNDBLAD, ARNE. See MORENO, LUNDBLAD, and KABAT, 439

MALAKIAN, ARTIN H., and SCHWAB, JOHN H. Biological characterization of an immunosuppressant from Group A streptococci, 1253
MANNIK, MART, and AREND, WILLIAM P. Fate of preformed immune complexes in rabbits and rhesus monkeys, 19 s
MARCHALONIS, JOHN J. See CONE, MARCHALONIS, and ROLLEY, 1373
MARTIN, W. J. See MILLER, SPRENT, BASTEN, WARNER, BREITNER, ROWLAND, HAMILTON, SILVER, and MARTIN, 1266
MAUEL, J., and DEFENDI, V. Infection and transformation of mouse peritoneal macrophages by simian virus 40, 335
MAY, JOSEPH. See FRANK, MAY, GAITHER, and ELLMAN, 176
MCARTHUR, W. P., CHAPMAN, J., and THORBECKE, G. J. Immunocompetent cells of the chicken. I. Specific surface antigenic markers on bursa and thymus cells, 1036
MCBRIDE, RAYMOND A., and SCHIERMAN, LOUIS W. Passive antibody and the immune response. Factors which determine enhancement and suppression, 833
MCCLUSKEY, ROBERT T. The value of immunofluorescence in the study of human renal disease, 242 s
MCGARRY, M. P., SPEIRS, R. S., JENKINS, V. K., and TRENTIN, J. J. Lymphoid cell dependence of eosinophil response to antigen, 801
MCINTIRE, K. ROBERT. See TAKAHASHI, OLD, MCINTIRE, and BOYSE, 815
MERGENHAGEN, STEPHAN E. See SNYDERMAN, PHILLIPS, and MERGENHAGEN, 1131

METZGER, HENRY. See SULLIVAN, GRIMLEY, and METZGER, 1403
MICHAEL, ALFRED F., WESTBERG, N. GUNNAR, FISH, ALFRED J., and VERNIER, ROBERT L. Studies on chronic membranoproliferative glomerulonephritis with hypocomplementemia, 208 s
MILGROM, F., KLASSEN, J., and FUJI, H. Immunologic injury of renal homografts, 193 s
MILLER, J. F. A. P., and SPRENT, J. Cell-to-cell interaction in the immune response. VI. Contribution of thymus-derived cells and antibody-forming cell precursors to immunological memory, 66
—, —, BASTEN, A., WARNER, N. L., BREITNER, J. C. S., ROWLAND, G., HAMILTON, J., SILVER, H., and MARTIN, W. J. Cell-to-cell interaction in the immune response. VII. Requirement for differentiation of thymus-derived cells, 1266
MILLER, R. G. See GORCZYNSKI, MILLER, and PHILLIPS, 1201
MILLMAN, IRVING. See BLUMBERG, MILLMAN, SUTNICK, and LONDON, 320 s
MIZOGUCHI, HIDEAKI, and LEVERE, RICHARD D. Enhancement of heme and globin synthesis in cultured human marrow by certain 5β-H steroid metabolites, 1501
MOORE, MALCOLM A. S. See WARNER and MOORE, 313
MORENO, CARLOS, LUNDBLAD, ARNE, and KABAT, ELVIN A. Immunochemical studies on blood groups. LI. A comparative study of the reaction of A_1 and A_2 blood group glycoproteins with human anti-A, 439
MORGAN, COUNCILMAN. See GOCKE, HSU, MORGAN, BOMBARDIERI, LOCKSHIN, and CHRISTIAN, 330 s
MOSES, HAROLD L. See SONG, MOSES, ROSENTHAL, GELB, and KAPPAS, 1349
MOZES, EDNA, and SHEARER, G. M. Contribution of bone marrow cells and lack of expression of thymocytes in genetic controls of immune responses for two immunopotent regions within poly-(Phe,Glu)-poly-Pro--poly-Lys in inbred mouse strains, 141
MÜLLER-EBERHARD, HANS J. See GÖTZE and MÜLLER-EBERHARD, 90 s
—. See ZIMMERMAN, ARROYAVE, and MÜLLER-EBERHARD, 1591
—. See ZIMMERMAN and MÜLLER-EBERHARD, 1601

NACHMAN, R. L. See WEKSLER and NACHMAN, 1114
NEHLSEN, SANDRA. See WORTIS, NEHLSEN, and OWEN, 681
NISONOFF, ALFRED. See ROSENSTEIN, NISONOFF, and UHR, 1431
—. See SPRING, SCHROEDER, and NISONOFF, 765
NORDIN, A. A. See CEROTTINI, NORDIN, and BRUNNER, 553
NORTH, ROBERT J. The action of cortisone acetate on cell-mediated immunity to infection: suppression of host cell proliferation and alteration of cellular composition of infective foci, 1485
NOTKINS, ABNER LOUIS. Infectious virus–antibody complexes: interaction with anti-immunoglobulins, complement, and rheumatoid factor, 41 s

OLD, LLOYD J. See TAKAHASHI, OLD, MCINTIRE, and BOYSE, 815
OLDSTONE, MICHAEL B. A., and DIXON, FRANK J. Immune complex disease in chronic viral infections, 32 s
—. See DIXON, OLDSTONE, and TONIETTI, 65 s
ORANGE, ROBERT P., AUSTEN, W. GERALD, and AUSTEN, K. FRANK. Immunological release of histamine and slow-reacting substance of anaphylaxis from human lung. I.

Modulation by agents influencing cellular levels of cyclic 3′,5′-adenosine monophosphate, 136 s

ORSINI, FRANK, and SHULMAN, SIDNEY. The antigens and autoantigens of the seminal vesicle. I. Immunochemical studies on guinea pig vesicular fluid, 120

OWEN, JOHN J. See WORTIS, NEHLSEN, and OWEN, 681

PANDIAN, M. R., and TALWAR, G. P. Effect of growth hormone on the metabolism of thymus and on the immune response against sheep erythrocytes, 1095

PARISH, C. R. Immune response to chemically modified flagellin. I. Induction of antibody tolerance to flagellin by acetoacetylated derivatives of the protein, 1

——. II. Evidence for a fundamental relationship between humoral and cell-mediated immunity, 21

PAUL, WILLIAM E. See DAVIE and PAUL, 495

—. See DAVIE, ROSENTHAL, and PAUL, 517

—. See KATZ, DAVIE, PAUL, and BENACERRAF, 201

PAULING, V. L. See SPITZER, STITZEL, PAULING, DAVIS, and WEST, 656

PERLMANN, PETER. See HAMMARSTRÖM, CARLSSON, PERLMANN, and SVENSSON, 565

PHILLIPS, JEAN K. See SNYDERMAN, PHILLIPS, and MERGENHAGEN, 1131

PHILLIPS, PAUL E. Virologic studies in rheumatoid arthritis and other connective tissue diseases, 313 s

PHILLIPS, R. A. See GORCZYNSKI, MILLER, and PHILLIPS, 1201

PHILLIPS-QUAGLIATA, JULIA M. See VAZ, PHILLIPS-QUAGLIATA, LEVINE, and VAZ, 1335

PIERCE, CARL W., JOHNSON, BARBARA M., GERSHON, HARRIET E., and ASOFSKY, RICHARD. Immune responses in vitro. III. Development of primary γM, γG, and γA plaque-forming cell responses in mouse spleen cell cultures stimulated with heterologous erythrocytes, 395

POTTER, MICHAEL. See BAUMAL, POTTER, and SCHARFF, 1316

RAMSEIER, HANSRUEDY, and LINDENMANN, JEAN. Cellular receptors. Effect of anti-alloantiserum on the recognition of transplantation antigens, 1083

RAPAPORT, FELIX T. See DAUSSET, RAPAPORT, CANNON, and FERREBEE, 1222

RICHERSON, HAL B. Cutaneous basophil (Jones-Mote) hypersensitivity after "tolerogenic" doses of intravenous ovalbumin in the guinea pig, 630

RIPPS, CAROLYN S. See GORDON, RIPPS, and COHN, 1187

RITT, DONALD J. See EDGINGTON and RITT, 871

ROCKLIN, ROSS E. See SCHLOSSMAN, LEVIN, ROCKLIN, and DAVID, 741

ROGERS, STANFIELD. Change in the structure of Shope papilloma virus-induced arginase associated with mutation of the virus, 1442

ROLLEY, RONALD T. See CONE, MARCHALONIS, and ROLLEY, 1373

ROSENSTEIN, ROBERT W., NISONOFF, ALFRED, and UHR, JONATHAN W. Significance of bivalence of antibody in viral neutralization, 1431

ROSENSTREICH, DAVID L., BLAKE, J. THOMAS, and ROSENTHAL, ALAN S. The peritoneal exudate lymphocyte. I. Differences in antigen responsiveness between peritoneal exudate and lymph node lymphocytes from immunized guinea pigs, 1170

ROSENTHAL, ALAN S. See DAVIE, ROSENTHAL, and PAUL, 517
—. See ROSENSTREICH, BLAKE, and ROSENTHAL, 1170
—. See SONG, MOSES, ROSENTHAL, GELB, and KAPPAS, 1349
ROTMAN, BORIS. See CELADA, ELLIS, BODLUND, and ROTMAN, 751
ROTTA, JIRI, KRAUSE, RICHARD M., LANCEFIELD, REBECCA C., EVERLY, WILLIAM, and LACKLAND, HENRY. New approaches for the laboratory recognition of M types of Group A streptococci, 1298
ROWLAND, G. See MILLER, SPRENT, BASTEN, WARNER, BREITNER, ROWLAND, HAMILTON, SILVER, and MARTIN, 1266
RUDDY, SHAUN, EVERSON, LLOYD K., SCHUR, PETER H., and AUSTEN, K. FRANK. Hemolytic assay of the ninth complement component: elevation and depletion in rheumatic diseases, 259 s

SAKURAMI, TAKEHIKO. See COSTELLO, IZUMI, and SAKURAMI, 366
SCHARRF, MATTHEW D. See BAUMAL, POTTER, and SCHARRF, 1316
SCHIERMAN, LOUIS W. See MCBRIDE and SCHIERMAN, 833
SCHIFFMAN, GERALD, BORNSTEIN, DONALD L., and AUSTRIAN, ROBERT. Capsulation of pneumococcus with soluble cell wall-like polysaccharide. II. Nonidentity of cell wall and soluble cell wall-like polysaccharides derived from the same and from different pneumococcal strains, 600
SCHLOSSMAN, STUART F., LEVIN, HOWARD A., ROCKLIN, ROSS E., and DAVID, JOHN R. The compartmentalization of antigen-reactive lymphocytes in desensitized guinea pigs, 741
SCHROEDER, KENNETH W. See SPRING, SCHROEDER, and NISONOFF, 765
SCHUR, PETER H. See RUDDY, EVERSON, SCHUR, and AUSTEN, 259 s
SCHWAB, JOHN H. See MALAKIAN and SCHWAB, 1253
SCHWARTZ, ROBERT S. See LEWIS and SCHWARTZ, 417
SHEARER, G. M. See MOZES and SHEARER, 141
SHULMAN, SIDNEY. See ORSINI and SHULMAN, 120
SILVER, H. See MILLER, SPRENT, BASTEN, WARNER, BREITNER, ROWLAND, HAMILTON, SILVER, and MARTIN, 1266
SIMBERKOFF, MICHAEL S., and ELSBACH, PETER. The interaction in vitro between polymorphonuclear leukocytes and mycoplasma, 1417
SMALL, MYRA, and TRAININ, NATHAN. Contribution of a thymic humoral factor to the development of an immunologically competent population from cells of mouse bone marrow, 786
SMITH, CAROL A. Properties of synovial cells in culture, 306 s
SNYDERMAN, RALPH, PHILLIPS, JEAN K., and MERGENHAGEN, STEPHAN E. Biological activity of complement in vivo. Role of C5 in the accumulation of polymorphonuclear leukocytes in inflammatory exudates, 1131
SONG, CHULL S., MOSES, HAROLD L., ROSENTHAL, ALAN S., GELB, NANCY A., and KAPPAS, ATTALLAH. The influence of postnatal development on drug-induced hepatic porphyria and the synthesis of cytochrome P-450. A biochemical and morphological study, 1349
SPEIRS, R. S. See MCGARRY, SPEIRS, JENKINS, and TRENTIN, 801
SPIELER, PAUL J. See WEISSMANN, ZURIER, SPIELER, and GOLDSTEIN, 149 s
SPITZER, R. E., STITZEL, A. E., PAULING, V. L., DAVIS, N. C., and WEST, C. D. The antigenic and molecular alterations of C3 in the

fluid phase during an immune reaction in normal human serum. Demonstration of a new conversion product, C3x, 656

SPRENT, JOHN. See BANKHURST, WARNER, and SPRENT, 1005

—. See MILLER and SPRENT, 66

—. See MILLER, SPRENT, BASTEN, WARNER, BREITNER, ROWLAND, HAMILTON, SILVER, and MARTIN, 1266

SPRING, SUSAN B., SCHROEDER, KENNETH W., and NISONOFF, ALFRED. Quantitative investigations of idiotypic antibodies. V. Factors affecting the persistence and replacement of clones of antibody-producing cells, 765

STEINBERG, ALFRED D. See TALAL, STEINBERG, JACOBS, CHUSED, and GAZDAR, 52 s

STITZEL, A. E. See SPITZER, STITZEL, PAULING, DAVIS, and WEST, 656

STOLLERMAN, GENE H. See BEACHEY and STOLLERMAN, 351

SULLIVAN, ALBERT L., GRIMLEY, PHILIP M., and METZGER, HENRY. Electron microscopic localization of immunoglobulin E on the surface membrane of human basophils, 1403

SUTNICK, ALTON I. See BLUMBERG, MILLMAN, SUTNICK, and LONDON, 320 s

SVEDMYR, ERIK A. J. See GOLSTEIN, SVEDMYR, and WIGZELL, 1385

SVENSSON, SIGFRID. See HAMMARSTRÖM, CARLSSON, PERLMANN, and SVENSSON, 565

SWANSON, JOHN, KRAUS, STEPHEN J., and GOTSCHLICH, EMIL C. Studies on gonococcus infection. I. Pili and zones of adhesion: their relation to gonococcal growth patterns, 886

TAKAHASHI, TOSHITADA, OLD, LLOYD J., MCINTIRE, K. ROBERT, and BOYSE, EDWARD A. Immunoglobulin and other surface antigens of cells of the immune system, 815

TALAL, NORMAN, STEINBERG, ALFRED D., JACOBS, MICHAEL E., CHUSED, THOMAS M., and GAZDAR, ADI F. Immune cell cooperation, viruses, and antibodies to nucleic acids in New Zealand mice, 52 s

TALWAR, G. P. See PANDIAN and TALWAR, 1095

THOBURN, R. See KOFFLER, AGNELLO, THOBURN, and KUNKEL, 169 s

—. See KOFFLER, CARR, AGNELLO, THOBURN, and KUNKEL, 294

THORBECKE, G. J. See MCARTHUR, CHAPMAN, and THORBECKE, 1036

TONIETTI, GIORGIO. See DIXON, OLDSTONE, and TONIETTI, 65 s

TRAININ, NATHAN. See SMALL and TRAININ, 786

TRENTIN, J. J. See MCGARRY, SPEIRS, JENKINS, and TRENTIN, 801

TSAN, MIN-FU, and BERLIN, RICHARD D. Effect of phagocytosis on membrane transport of nonelectrolytes, 1016

TUBERGEN, DAVID G., and FELDMAN, JOSEPH D. The role of thymus and bone marrow cells in delayed hypersensitivity, 1144

UHR, JONATHAN W. See ROSENSTEIN, NISONOFF, and UHR, 1431

—. See VITETTA, BAUR, and UHR, 242

ULLYOT, JOAN L. See BAINTON, ULLYOT, and FARQUHAR, 907

VAZ, EDA M. See VAZ, PHILLIPS-QUAGLIATA, LEVINE, and VAZ, 1335

VAZ, NELSON M., PHILLIPS-QUAGLIATA, JULIA M., LEVINE, BERNARD B., and VAZ, EDA M. *H-2*–linked genetic control of immune responsiveness to ovalbumin and ovomucoid, 1335

VERNIER, ROBERT L. See MICHAEL,

WESTBERG, FISH, and VERNIER, 208 s
VITETTA, ELLEN S., BAUR, SONIA, and UHR, JONATHAN W. Cell surface immunoglobulin. II. Isolation and characterization of immunoglobulin from mouse splenic lymphocytes, 242

WALDMAN, ROBERT H., and HENNEY, CHRISTOPHER S. Cell-mediated immunity and antibody responses in the respiratory tract after local and systemic immunization, 482
WANNAMAKER, LEWIS W. See DAJANI and WANNAMAKER, 588
WARD, PETER A. Complement-derived leukotactic factors in pathological fluids, 109 s
WARNER, NOEL L., and MOORE, MALCOLM A. S. Defects in hematopoietic differentiation in NZB and NZC mice, 313
—. See BANKHURST, WARNER, and SPRENT, 1005
—. See MILLER, SPRENT, BASTEN, WARNER, BREITNER, ROWLAND, HAMILTON, SILVER, and MARTIN, 1266
WEISSMANN, GERALD, ZURIER, ROBERT B., SPIELER, PAUL J., and GOLDSTEIN, IRA M. Mechanisms of lysosomal enzyme release from leukocytes exposed to immune complexes and other particles, 149 s
WEKSLER, BABETTE B., and NACHMAN, R. L. Rabbit platelet bactericidal protein, 1114
WERB, ZENA, and COHN, ZANVIL A. Cholesterol metabolism in the macrophage. I. The regulation of cholesterol exchange, 1545
— and —. II. Alteration of subcellular exchangeable cholesterol compartments and exchange in other cell types, 1570
WEST, C. D. See SPITZER, STITZEL, PAULING, DAVIS, and WEST, 656
WESTBERG, N. GUNNAR. See MICHAEL, WESTBERG, FISH, and VERNIER, 208 s
WIGZELL, HANS. See GOLSTEIN, SVEDMYR, and WIGZELL, 1385
WILSON, CURTIS B., and DIXON, FRANK J. Quantitation of acute and chronic serum sickness in the rabbit, 7 s
WILSON, DARCY B., and FOX, DIANNE H. Quantitative studies on the mixed lymphocyte interaction in rats. VI. Reactivity of lymphocytes from conventional and germfree rats to allogeneic and xenogeneic cell surface antigens, 857
WINCHESTER, R. J., KUNKEL, H. G., and AGNELLO, V. Occurrence of γ-globulin complexes in serum and joint fluid of rheumatoid arthritis patients: use of monoclonal rheumatoid factors as reagents for their demonstration, 286 s
—. See AGNELLO, KOFFLER, EISENBERG, WINCHESTER, and KUNKEL, 228 s
WORTIS, HENRY H., NEHLSEN, SANDRA, and OWEN, JOHN J. Abnormal development of the thymus in "nude" mice, 681
WU, CHIN-YU, and CINADER, BERNARD. Antigenic promotion. Increase in hapten-specific plaque-forming cells after preinjection with structurally unrelated macromolecules, 693
WUEPPER, K. D. See COCHRANE and WUEPPER, 986

ZABRISKIE, JOHN B. The role of streptococci in human glomerulonephritis, 180 s
ZATZ, MARION M., and LANCE, EUGENE M. The distribution of ^{51}Cr-labeled lymphocytes into antigen-stimulated mice. Lymphocyte trapping, 224
ZIFF, MORRIS. See HURD, KINSELLA, and ZIFF, 296 s

ZIMMERMAN, THEODORE S., ARROYAVE, CARLOS M., and MÜLLER-EBERHARD, HANS J. A blood coagulation abnormality in rabbits deficient in the sixth component of complement (C6) and its correction by purified C6, 1591

— and MÜLLER-EBERHARD, HANS J. Blood coagulation initiation by a complement-mediated pathway, 1601

ZURIER, ROBERT B. SEE WEISSMANN, ZURIER, SPIELER, and GOLDSTEIN, 149 s

ZVAIFLER, NATHAN J. Immunoreactants in rheumatoid synovial effusions, 276 s

INDEX TO SUBJECTS

ACETOACETYLATED derivatives of protein, flagellin, induction of antibody tolerance by means of, 1

Acid, deoxyribonucleic, macrophage, activation of synthesis, studies with inhibitors of protein synthesis and with synchronized melanoma cells in macrophage-melanoma cell heterokaryons, 935

—, L-glutamic, and L-alanine and L-glutamic acid and L-tyrosine, dominant genetic control of immune responsiveness to copolymers of, 458

—, L-glutamic, and L-alanine and L-glutamic acid and L-tyrosine in random-bred Hartley guinea pigs, relationship between poly-L-lysine gene and genes controlling immune responsiveness to copolymers of, 471

—, L-glutamic, and L-tyrosine, copolymer of, demonstration in random-bred guinea pigs that responsiveness to is predicated upon possession of distinct strain 13 histocompatibility specificity, 1538

Acids, nucleic, antibodies to, immune cell cooperation, and viruses in New Zealand mice, 52 s

3′,5′-Adenosine monophosphate, cyclic, cellular levels, modulation of immunological release of histamine and slow-reacting substance of anaphylaxis from human lung by agents influencing, 136 s

Adhesion zones and pili, relation to gonococcal growth patterns, 886

L-Alanine and L-glutamic acid and L-glutamic acid and L-tyrosine, dominant genetic control of immune responsiveness to copolymers of, 458

L-Alanine and L-glutamic acid and L-glutamic acid and L-tyrosine in random-bred Hartley guinea pigs, relationship between poly-L-lysine gene and genes controlling immune responsiveness to copolymers of, 471

Albumin-^{125}I–binding dinitrophenylated cells, specificity and nature of receptors on, 517

— normal lymphocytes, dinitrophenylated, specificity and nature of receptors on, 495

Alloantibody-forming cells and cytotoxic lymphocytes, development in graft-*versus*-host reaction, cellular and humoral responses to transplantation antigens, 553

Alloantiserum, anti-, effect on recognition of transplantation antigens, 1083

Allogeneic and xenogeneic cell surface antigens, reactivity of lymphocytes from conventional and germfree rats to, quantitative studies, 857

Allografts, bone marrow, peculiar immunobiology, graft rejection, irradiated response, 83

—, bone marrow, peculiar immunobiology, rejection of parental grafts by resistant F_1 hybrid mice, 1513

Anamnestic responses, anti-hapten, by nonimmunogenic hapten-polypeptide conjugates, conditions for induction of hapten-specific tolerance or stimulation of, 201

Anaphylaxis, slow-reacting substance of, and histamine, immunological

release from human lung, modulation by agents influencing cellular levels of cyclic 3′,5′-adenosine monophosphate, 136 s
Antibodies, homocytotropic, specificity of fixation loci for, 381
—, idiotypic, quantitative investigations, factors affecting persistence and replacement of clones of antibody-producing cells, 765
— to nucleic acids, immune cell cooperation, and viruses in New Zealand mice, 52 s
— to polynucleotides in human sera, antigenic specificity and relation to disease, 294
— to streptococcal carbohydrates, inheritance of individual antigenic specificities of, 532
Antibody, anti–dinitrophenylated bovine γ-globulin, produced in adoptive recipients, effect of delayed challenge on affinity of, antigen modulation of immune response, 1453
—, bivalence, significance in viral neutralization, 1431
—, passive, and immune response, factors which determine enhancement and suppression, 833
—, passively administered, differential effect on thymus-derived and bone marrow–derived lymphocytes in regulation of immune response, 577
— responses, anti-hapten, carrier function in, 201
— responses and cell-mediated immunity in respiratory tract after local and systemic immunization, 482
— tolerance to flagellin, induction by acetoacetylated derivatives of protein, 1
Antibody-antigen complex formation, nature of Australia antigen and relation to, 320 s
Antibody-forming cell precursors and thymus-derived cells, contribution to immunological memory, cell-to-cell interaction in immune response, 66
Antibody–infectious virus complexes, interaction with anti-immunoglobulins, complement, and rheumatoid factor, 41 s
Antibody-mediated activation of defective β-D-galactosidase, immunological relationship between normal and defective enzyme, 751
Antibody-producing cells, clones, factors affecting persistence and replacement of, quantitative investigations of idiotypic antibodies, 765
—cells, identification of young plaque-forming cells by thymidine-^{3}H labeling, 1155
Antigen, Australia, nature and relation to antigen-antibody complex formation, 320 s
—, Australia, vasculitis in association with, 330 s
—, common, immunochemistry of Enterobacteriaceae (Kunin), relation to lipopolysaccharide core structure, 565
—, lymphoid cell dependence of eosinophil response to, 801
— modulation of immune response, effect of delayed challenge on affinity of anti–dinitrophenylated bovine γ-globulin antibody produced in adoptive recipients, 1453
— responsiveness, differences between peritoneal exudate and lymph node lymphocytes, 1170
Antigen-reactive lymphocytes, compartmentalization in desensitized guinea pigs, 741
Antigen-stimulated mice, distribution of ^{51}Cr-labeled lymphocytes into, lymphocyte trapping, 224
Antigenic markers, specific surface, on bursa and thymus cells, 1036
— and molecular alterations of C3 in fluid phase during immune reaction in human serum, demonstration of new conversion product, C3x, 656
—promotion, increase in hapten-specific plaque-forming cells after

preinjection with structurally unrelated macromolecules, 693
Antigenic specificities, individual, of antibodies to streptococcal carbohydrates, inheritance of, 532
— specificity and relation to disease of antibodies to polynucleotides in human sera, 294
—structure and requirement for thymus-derived cells in immune response, relationship between, 103
Antigenicity, non-, and immunologic tolerance, role of carrier in induction of tolerance to hapten, 1046
Antigens and autoantigens of seminal vesicle, immunochemical studies on vesicular fluid, 120
—, cell surface, allogeneic and xenogeneic, reactivity of lymphocytes from conventional and germfree rats to, quantitative studies, 857
—, serum hepatitis virus–associated, intrahepatic expression of, 871
—, surface, and immunoglobulin, of immune system cells, 815
—, transplantation, cellular and humoral response to, development of alloantibody-forming cells and cytotoxic lymphocytes in graft-*versus*-host reaction, 553
—, transplantation, effect of anti-alloantiserum on recognition of, 1083
Anti-hapten anamnestic responses by nonimmunogenic hapten-polypeptide conjugates, conditions for induction of hapten-specific tolerance or stimulation of, 201
Anti-immunoglobulins, complement, and rheumatoid factor, interaction of infectious virus–antibody complexes with, 41 s
Antisera, enhancing, effect on lymphocyte-mediated cytotoxicity in vitro, 1238
Arginase, Shope papilloma virus–induced, structural changes associated with mutation of virus, 1442
Arthritis patients, rheumatoid, serum and joint fluid, use of monoclonal rheumatoid factors as reagents for demonstration of occurrence of γ-globulin complexes in, 286 s
—, rheumatoid, and other connective tissue diseases, virologic studies in, 313 s
Australia antigen, nature and relation to antigen-antibody complex formation, 320 s
— antigen, vasculitis in association with, 330 s
Autoantigens and antigens of seminal vesicle, immunochemical studies on vesicular fluid, 120
Azurophil and specific granules, origin and content in development of neutrophilic polymorphonuclear leukocytes in human bone marrow, 907

BACTERICIDAL protein, platelet, 1114
Basophil, cutaneous, Jones-Mote, hypersensitivity after tolerogenic doses of intravenous ovalbumin, 630
Basophils, human, surface membrane, electron microscopic localization of immunoglobulin E on, 1403
Biochemical and morphological study of influence of postnatal development on drug-induced hepatic porphyria and cytochrome P-450 synthesis, 1349
Biological activity of complement in vivo, role of C5 in accumulation of polymorphonuclear leukocytes in inflammatory exudates, 1131
— characterization of immunosuppressant from Group A streptococci, 1253
Biology, immuno-, peculiar, of bone marrow allografts, graft rejection, irradiated response, 83
—, immuno-, peculiar, of bone marrow allografts, rejection of parental grafts by resistant F_1 hybrid mice, 1513

Blood coagulation abnormality in C6-deficiency, correction by purified C6, 1591
— coagulation initiation by complement-mediated pathway, 1601
— group glycoproteins, A_1 and A_2, reaction with human anti-A, comparative study, 439
—, human, toxic effects of streptococcal M protein on platelets and polymorphonuclear leukocytes in, 351
Bone marrow allografts, peculiar immunobiology, graft rejection, irradiated response, 83
— marrow allografts, peculiar immunobiology, rejection of parental grafts by resistant F_1 hybrid mice, 1513
— marrow cells, contribution, and lack of expression of thymocytes, in genetic controls of immune responses for two immunopotent regions within poly-(Phe,Glu)-poly-Pro--poly-Lys, 141
— marrow cells, contribution of thymic humoral factor to development of immunologically competent population from, 786
— marrow graft rejection, genetic control, determinant-specific difference of reactivity in two pairs of inbred mouse strains, 281
— marrow, human, development of neutrophilic polymorphonuclear leukocytes in, origin and content of azurophil and specific granules, 907
— marrow and thymus cells, role in delayed hypersensitivity, 1144
— marrow-derived and thymus-derived lymphocytes, differential effect of passively administered antibody on regulation of immune response, 577
Bovine γ-globulin antibody, anti-dinitrophenylated, produced in adoptive recipients, effect of delayed challenge on affinity of, antigen modulation of immune response, 1453
Breeding, closely bred colony of dogs, histocompatibility studies, genetic definition of DL-A system with particular reference to comparative immunogenicity of major transplantable organs, 1222
— colony, established, genetic analysis, canine systemic lupus erythematosus, 417
Bursa and thymus cells, specific surface antigenic markers on, 1036

CANINE histocompatibility, DL-A system, studied in closely bred colony, genetic definition with particular reference to comparative immunogenicity of major transplantable organs, 1222
Capsulation of pneumococcus with soluble cell wall–like polysaccharide, 600
Carbohydrates, streptococcal, inheritance of individual antigenic specificities of antibodies to, 532
Carrier function in anti-hapten antibody responses, 201
—, role in induction of tolerance to hapten, nonantigenicity and immunologic tolerance, 1046
Cell culture, development of hypersensitive lymphocytes in, 1062
—, heterokaryons, macrophage-melanoma, activation of macrophage DNA synthesis, studies with inhibitors of protein synthesis and with synchronized melanoma cells, 935
—, heterokaryons, macrophage-melanoma, unmasking macrophage-specific membrane receptors, 947
—, L, hybrids, macrophage–, preparation and properties, 1187
—, immune, cooperation, viruses, and antibodies to nucleic acids in New Zealand mice, 52 s
—, lymphoid, dependence of eosinophil response to antigen, 801

Cell precursors, antibody-forming, and thymus-derived cells, contribution to immunological memory, cell-to-cell interaction in immune response, 66
—, radiation-resistant, in immune response to erythrocytes, in vivo requirement for, 1201
— responses, plaque-forming, primary γM, γG, and γA, development in spleen cell cultures stimulated with heterologous erythrocytes, 395
— surface antigens, allogeneic and xenogeneic, reactivity of lymphocytes from conventional and germ-free rats to, quantitative studies, 857
— surface immunoglobulin, splenic lymphocytes, isolation and characterization, 242
— surface proteins, metabolic release, lymphocyte membrane dynamics, 1373
— types other than macrophage, alteration of subcellular exchangeable cholesterol compartments and exchange in, 1570
— wall and soluble cell wall–like polysaccharides derived from same and from different pneumococcal strains, nonidentity of, 600
Cell-to-cell interaction in immune response, contribution of thymus-derived cells and antibody-forming cell precursors to immunological memory, 66
— interaction in immune response, requirement for differentiation of thymus-derived cells, 1266
Cell-host proliferation, suppression, and alteration of cellular composition of infective foci, cortisone acetate action on cell-mediated immunity to infection, 1485
Cell-mediated and humoral immunity, evidence for fundamental relationship between, immune response to chemically modified flagellin, 21
Cell-mediated immunity and antibody responses in respiratory tract after local and systemic immunization, 482
— immunity to infection, cortisone acetate action on, suppression of host-cell proliferation and alteration of cellular composition of infective foci, 1485
Cells, alloantibody-forming, and cytotoxic lymphocytes, development in graft-*versus*-host reaction, cellular and humoral response to transplantation antigens, 553
—, antibody-producing, clones, factors affecting persistence and replacement of, quantitative investigations of idiotypic antibodies, 765
—, bone marrow, contribution, and lack of expression of thymocytes, in genetic controls of immune responses for two immunopotent regions within poly-(Phe,Glu)-poly-Pro--poly-Lys, 141
—, bone marrow, contribution of thymic humoral factor to development of immunologically competent population from, 786
—, bone marrow, and thymus, role in delayed hypersensitivity, 1144
—, hapten-specific plaque-forming, increase after preinjection with structurally unrelated macromolecules, 693
—, immune system, immunoglobulin and other surface antigens of, 815
—, immunocompetent, specific surface antigenic markers on bursa and thymus cells, 1036
—, immunocompetent, specificity and nature of receptors on dinitrophenylated albumin-^{125}I–binding cells, 517
—, immunocompetent, specificity and nature of receptors on dinitrophenylated albumin-^{125}I–binding normal lymphocytes, 495
—, interaction with immune complexes, adherence, release of con-

stituents. and tissue injury, 114 s
Cells, leukemia, lymphocytic, chronic, characterization of immunoglobulin structures from surface of, 265
—, lymphoid, thymus and thymus-derived, surface immunoglobulins on, 1005
—, melanoma, synchronized, and inhibitors of protein synthesis, studies with, and activation of macrophage DNA synthesis in macrophage-melanoma cell heterokaryons, 935
—, myeloma, synthesis, assembly, and secretion of γ-globulin by, assembly of three subclasses of IgG, 1316
—, plaque-forming, young, identification by thymidine-^{3}H labeling, 1155
—, receptor-bearing lymphocytes, mediating specific in vitro cytotoxicity, detection of, 1385
—, synovial exudate, and synoviocytes, immunohistologic studies, 296 s
—, synovial, in culture, properties, 306 s
—, thymus-derived, and antibody-forming cell precursors, contribution to immunological memory, cell-to-cell interaction in immune response, 66
—, thymus-derived, differentiation, requirement of cell-to-cell interaction in immune response, 1266
—, thymus-derived, engaged in initiation of humoral immune response, immunoglobulins on surface of, 618
—, thymus-derived, requirement for, and antigenic structure in immune response, relationship between, 103
Cellular composition of infective foci, alteration, and suppression of host-cell proliferation, cortisone acetate action on cell-mediated immunity to infection, 1485
Cellular and humoral response to transplantation antigens, development of alloantibody-forming cells and cytotoxic lymphocytes in graft-*versus*-host reaction, 553
— levels of cyclic 3′,5′-adenosine monophosphate, modulation of immunological release of histamine and slow-reacting substance of anaphylaxis from human lung by agents influencing, 136 s
— receptors, effect of anti-alloantiserum on recognition of transplantation antigens, 1083
Chemical, immuno-, studies on blood groups, comparative study of reaction of A_1 and A_2 blood group glycoproteins with human anti-A, 439
—, immuno-, studies on vesicular fluid, antigens and autoantigens of seminal vesicle, 120
Chemically modified flagellin, immune response to, evidence for fundamental relationship between humoral and cell-mediated immunity, 21
— modified flagellin, immune response to, induction of antibody tolerance by acetoacetylated derivatives of protein, 1
Chemistry, immuno-, of common antigen of Enterobacteriaceae (Kunin), relation to lipopolysaccharide core structure, 565
Cholesterol metabolism in macrophage, alteration of subcellular exchangeable compartments and exchange in other cell types, 1570
— metabolism in macrophage, regulation of exchange, 1545
Chromium-51, lymphocytes labeled with, distribution into antigen-stimulated mice, lymphocyte trapping, 224
Clones of antibody-producing cells, factors affecting persistence and

replacement of, quantitative investigations of idiotypic antibodies, 765
Clotting factor XII (Hageman factor), relationship of first component of kinin-forming system in human and rabbit plasma to, 986
Coagulation abnormality, blood, in C6-deficiency, correction by purified C6, 1591
–, blood, initiation by complement-mediated pathway, 1601
Cobra venom factor, anticomplementary agent, prevention of localized and generalized Shwartzman reactions by, 642
Complement activation, C3-activator system, alternate pathway of, 90 s
—, anticomplementary agent, cobra venom factor, prevention of localized and generalized Shwartzman reactions by, 642
—, anti-immunoglobulins, and rheumatoid factor, interaction of infectious virus–antibody complexes with, 41 s
—, biological activity in vivo, role of C5 in accumulation of polymorphonuclear leukocytes in inflammatory exudates, 1131
— component, ninth, elevation and depletion in rheumatic diseases, hemolytic assay, 259 s
— 6 deficiency, blood coagulation abnormality in and correction by purified C6, 1591
—, early components, modulation of $C\bar{1}$ function by fragment derived from serum, effect on, 1466
— 3 in fluid phase during immune reaction in human serum, antigenic and molecular alterations, demonstration of new conversion product, C3x, 656
— function in sera of C4-deficient guinea pigs, in vitro studies, 176
—, in vivo studies in C4-deficient guinea pigs, 162
– C1q precipitins in sera of patients with systemic lupus erythematosus and other hypocomplementemic states, characterization of high and low molecular weight types, 228 s
Complement-derived leukotactic factors in pathological fluids, 109 s
Complement-mediated pathway, blood coagulation initiation by, 1601
Conjugates, hapten-polypeptide, nonimmunogenic, conditions for induction of hapten-specific tolerance or stimulation of anti-hapten anamnestic responses by, 201
Connective tissue diseases and rheumatoid arthritis, virologic studies in, 313 s
Copolymer of L-glutamic acid and L-tyrosine, demonstration in random-bred guinea pigs that responsiveness to is predicated upon possession of distinct strain 13 histocompatibility specificity, 1538
Copolymers of L-glutamic acid and L-alanine and L-glutamic acid and L-tyrosine, dominant genetic control of immune responsiveness to, 458
— of L-glutamic acid and L-alanine and L-glutamic acid and L-tyrosine in random-bred Hartley guinea pigs, relationship between poly-L-lysine gene and genes controlling immune responsiveness to, 471
Cortisone acetate action on cell-mediated immunity to infection, suppression of host-cell proliferation and alteration of cellular composition of infective foci, 1485
Culture, cell, development of hypersensitive lymphocytes in, 1062
—, properties of synovial cells in, 306 s
Cultured human marrow, heme and globin synthesis enhancement by 5β-H steroid metabolites, 1501
— macrophages, response to *Myco-*

bacterium tuberculosis, observations on fusion of lysosomes with phagosomes, 713
Cultures, spleen cell, stimulated with heterologous erythrocytes, development of primary γM, γG, and γA plaque-forming cell responses in, 395
Cytochrome P-450, synthesis, and drug-induced hepatic porphyria, biochemical and morphological study of influence of postnatal development on, 1349
Cytotoxic lymphocytes and alloantibody-forming cells, development in graft-*versus* host reaction, cellular and humoral response to transplantation antigens, 553
Cytotoxicity, in vitro, lymphocyte-mediated, effect of enhancing antisera, 1238
—, in vitro, specific, detection of receptor-bearing lymphocytes, cells mediating, 1385

DEOXYRIBONUCLEIC acid, macrophage, activation of synthesis, studies with inhibitors of protein synthesis and with synchronized melanoma cells in macrophage-melanoma cell heterokaryons, 935
Desensitized guinea pigs, compartmentalization of antigen-reactive lymphocytes in, 741
Dinitrophenylated albumin-^{125}I–binding cells, specificity and nature of receptors on, 517
— albumin-^{125}I–binding normal lymphocytes, specificity and nature of receptors on, 495
— bovine γ-globulin, anti–, antibody produced in adoptive recipients, effect of delayed challenge on affinity of, antigen modulation of immune response, 1453
Disease, immune complex, in chronic viral infections, 32 s
—, renal human, value of immunofluorescence in study of, 242 s
Diseases, connective tissue, and rheumatoid arthritis, virologic studies in, 313 s
—, rheumatic, elevation and depletion of ninth complement component in, hemolytic assay, 259 s
Dog systemic lupus erythematosus, genetic analysis of established breeding colony, 417
Drug-induced hepatic porphyria and cytochrome P-450 synthesis, biochemical and morphological study of influence of postnatal development on, 1349

EAR chambers, tissue grafts established in, combined light and electron microscopic study, 963
Electrolytes, non-, effect of phagocytosis on membrane transport of, 1016
Electron and light microscopic study, combined, on tissue grafts established in ear chambers, 963
— microscopic localization of immunoglobulin E on surface membrane of human basophils, 1403
Enterobacteriaceae (Kunin), common antigen, immunochemistry, relation to lipopolysaccharide core structure, 565
Enzyme, β-D-galactosidase, normal and defective, immunological relationship between, 751
— release, lysosomal, from leukocytes exposed to immune complexes and other particles, mechanisms, 149 s
Eosinophil response to antigen, lymphoid cell dependence of, 801
Erythrocytes, effect of growth hormone on thymus metabolism and on immune response against, 1095
—, heterologous, development of primary γM, γG, and γA plaque-forming cell responses in spleen cell cultures stimulated with, 395

Erythrocytes, in vivo requirement for radiation-resistant cell in immune response to, 1201
Exudate, peritoneal, and lymph node lymphocytes, differences in antigen responsiveness between, 1170
—, synovial, cells, and synoviocytes, immunohistologic studies, 296 s
Exudates, inflammatory, role of C5 in accumulation of polymorphonuclear leukocytes in, 1131

FLAGELLIN, chemically modified, immune response to, evidence for fundamental relationship between humoral and cell-mediated immunity, 21
—, chemically modified, immune response to, induction of antibody tolerance by acetoacetylated derivatives of protein, 1
Fluid, joint, and serum of rheumatoid arthritis patients, use of monoclonal rheumatoid factors as reagents for demonstration of occurrence of γ-globulin complexes in, 286 s
— phase, antigenic and molecular alterations of C3 in, during immune reaction in human serum, demonstration of new conversion product, C3x, 656
—, vesicular, immunochemical studies, antigens and autoantigens of seminal vesicle, 120
Fluids, pathological, complement-derived leukotactic factors in, 109 s
Fluorescence, immuno-, value in human renal disease study, 242 s

GA and GT, immune response genes, linkage to histocompatibility genotypes, 1529
β-D-Galactosidase, defective antibody-mediated activation of, immunological relationship between normal and defective enzyme, 751
Gene, poly-L-lysine, and genes controlling immune responsiveness to copolymers of L-glutamic acid and L-alanine and L-glutamic acid and L-tyrosine in random-bred Hartley guinea pigs, relationship between, 471
Genes, specific immune response, demonstration in random-bred guinea pigs that responsiveness to copolymer of L-glutamic acid and L-tyrosine is predicated upon possession of distinct strain 13 histocompatibility specificity, 1538
—, specific immune response, dominant genetic control of immune responsiveness to copolymers of L-glutamic acid and L-alanine and L-glutamic acid and L-tyrosine, 458
—, specific immune response, GA and GT, linkage to histocompatibility genotypes, 1529
—, specific immune response of random-bred Hartley guinea pigs, relationship between poly-L-lysine gene and genes controlling immune responsiveness to copolymers of L-glutamic acid and L-alanine and L-glutamic acid and L-tyrosine, 471
Genetic analysis of established breeding colony, canine systemic lupus erythematosus, 417
— control, dominant, of immune responsiveness to copolymers of L-glutamic acid and L-alanine and L-glutamic acid and L-tyrosine, 458
— control, *H-2*–linked, of immune responsiveness to ovalbumin and ovomucoid, 1335
— control of bone marrow graft rejection, determinant-specific difference of reactivity in two pairs of inbred mouse strains, 281
— controls of immune responses for two immunopotent regions within poly-(Phe,Glu)-poly-Pro--poly-Lys, contribution of bone marrow cells and lack of expression of thymocytes in, 141

Genetic definition of DL-A system of canine histocompatibility studied in closely bred colony with particular reference to comparative immunogenicity of major transplantable organs, 1222
— factors, influence on magnitude and heterogeneity of immune response, 48
Genotypes, histocompatibility, linkage of GA and GT immune response genes to, 1529
Germfree and conventional rats, reactivity of lymphocytes to allogeneic and xenogeneic cell surface antigens, quantitative studies, 857
— rat mesentery, vascular smooth muscle, tone and reactivity of, 846
Globin and heme synthesis in cultured human marrow, enhancement by 5β-H steroid metabolites, 1501
γ-Globulin bovine antibody, anti–dinitrophenylated, produced in adoptive recipients, effect of delayed challenge on affinity of, antigen modulation of immune response, 1453
— complexes, occurrence in serum and joint fluid of rheumatoid arthritis patients, use of monoclonal rheumatoid factors as reagents for demonstration, 286 s
—synthesis, assembly, and secretion by myeloma cells, assembly of three subclasses of IgG, 1316
Glomerulonephritis, human, role of streptococci in, 180 s
—, immune complex, of New Zealand mice, pathogenesis, 65 s
—, membranoproliferative, chronic, with hypocomplementemia, 208 s
L-Glutamic acid and L-alanine and L-glutamic acid and L-tyrosine, dominant genetic control of immune responsiveness to copolymers of, 458
L-Glutamic acid and L-alanine and L-glutamic acid and L-tyrosine in random-bred Hartley guinea pigs, relationship between poly-L-lysine gene and genes controlling immune responsiveness to copolymers of, 471
— acid and L-tyrosine, copolymer of, demonstration in random-bred guinea pigs that responsiveness to is predicated upon possession of distinct strain 13 histocompatibility specificity, 1538
Glycoproteins, A_1 and A_2 blood group, reaction with human anti-A, comparative study, 439
Gonococcal growth patterns, relation of pili and adhesion zones to, 886
Gonococcus infection, pili and adhesion zones, relation to gonococcal growth patterns, 886
Graft rejection, bone marrow, genetic control, determinant-specific difference of reactivity in two pairs of inbred mouse strains, 281
— rejection, irradiated response, peculiar immunobiology of bone marrow allografts, 83
Graft-*versus*-host reaction, development of alloantibody-forming cells and cytotoxic lymphocytes in, cellular and humoral responses to transplantation antigens, 553
Grafts, parental, rejection by resistant F_1 hybrid mice, peculiar immunobiology of bone marrow allografts, 1513
—, tissue, established in ear chambers, combined light and electron microscopic study, 963
Granules, specific, and azurophil, origin and content in development of neutrophilic polymorphonuclear leukocytes in human bone marrow, 907
Growth hormone, effect on thymus metabolism and on immune response against erythrocytes, 1095

Growth patterns, gonococcal, relation of pili and adhesion zones to, 886
GT and GA, immune response genes, linkage to histocompatibility genotypes, 1529

HAGEMAN factor, clotting factor XII, relationship of first component of kinin-forming system in human and rabbit plasma to, 986
Hapten, anti-, anamnestic responses by nonimmunogenic hapten-polypeptide conjugates, conditions for induction of hapten-specific tolerance or stimulation of, 201
—, role of carrier in induction of tolerance to, nonantigenicity and immunologic tolerance, 1046
Hapten-specific plaque-forming cells, increase after preinjection with structurally unrelated macromolecules, 693
— tolerance, conditions for induction or for stimulation of anti-hapten anamnestic responses by nonimmunogenic hapten polypeptide conjugates, 201
Hematopoietic differentiation in NZB and NZC mice, defects in, 313
Heme and globin synthesis in cultured human marrow, enhancement by 5β-H steroid metabolites, 1501
Hemolytic assay of ninth complement component, elevation and depletion in rheumatic diseases, 259 s
Hepatic porphyria, drug-induced, and cytochrome P-450 synthesis, biochemical and morphological study of influence of postnatal development on, 1349
Hepatitis, serum, virus–associated antigens, intrahepatic expression of, 871
Heterogeneity and magnitude of immune response, influence of genetic factors on, 48
Heterokaryons, macrophage-melanoma cell, activation of macrophage DNA synthesis, studies with inhibitors of protein synthesis and with synchronized melanoma cells, 935
Heterokaryons, macrophage-melanoma cell, unmasking macrophage-specific membrane receptor, 947
Heterologous erythrocytes, development of primary γM, γG, and γA plaque-forming cell responses in spleen cell cultures stimulated with, 395
Histamine and slow-reacting substance of anaphylaxis, immunological release from human lung, modulation by agents influencing cellular levels of cyclic 3′,5′-adenosine monophosphate, 136 s
Histocompatibility, canine, DL-A system, studied in closely bred colony, genetic definition with particular reference to comparative immunogenicity of major transplantable organs, 1222
— genotypes, linkage of GA and GT immune response genes to, 1529
— specificity, strain 13, distinct, demonstration in random-bred guinea pigs that responsiveness to copolymer of L-glutamic acid and L-tyrosine is predicated upon possession of, 1538
Histologic, immuno-, studies of synoviocytes and synovial exudate cells, 296 s
Homocytotropic antibodies, specificity of fixation loci for, 381
Homografts, renal, immunologic injury of, 193 s
Hormone, growth, effect on thymus metabolism and on immune response against erythrocytes, 1095
Host-cell proliferation, suppression, and alteration of cellular composition of infective foci, cortisone acetate action on cell-mediated immunity to infection, 1485
Host-*versus*-graft reaction, development of alloantibody-forming cells and cytotoxic lymphocytes in, cel-

lular and humoral response to transplantation antigens, 553
Humoral and cell-mediated immunity, evidence for fundamental relationship between, immune response to chemically modified flagellin, 21
— and cellular response to transplantation antigens, development of alloantibody-forming cells and cytotoxic lymphocytes in graft-*versus*-host reaction, 553
— factor, thymic, contribution to development of immunologically competent population from bone marrow cells, 786
— immune response, immunoglobulins on surface of thymus-derived cells engaged in initiation of, 618
Hybrid F_1 mice, resistant, rejection of parental grafts by, peculiar immunobiology of bone marrow allografts, 1513
Hybrids, macrophage–L cell, preparation and properties, 1187
Hypersensitive lymphocytes, development in cell culture, 1062
Hypersensitivity, cutaneous basophil, Jones-Mote, after tolerogenic doses of intravenous ovalbumin, 630
—, delayed, role of thymus and bone marrow cells in, 1144
Hypocomplementemia, chronic membranoproliferative glomerulonephritis with, 208 s
Hypocomplementemic states and systemic lupus erythematosus, characterization of high and low molecular weight types of Clq precipitins in sera of patients with, 228 s

IDIOTYPIC antibodies, quantitative investigations, factors affecting persistence and replacement of clones of antibody-producing cells, 765
Immune cell cooperation, viruses, and antibodies to nucleic acids in New Zealand mice, 52 s
Immune complex disease in chronic viral infections, 32 s
— complex glomerulonephritis of New Zealand mice, pathogenesis, 65 s
— complex nephritis in man, systemic lupus erythematosus prototype of, 169 s
— complexes, interaction of cells with, adherence, release of constituents, and tissue injury, 114 s
— complexes, mechanisms involved in deposition in tissues, 75 s
— complexes and other particles, mechanisms of lysosomal enzyme release from leukocytes exposed to, 149 s
— complexes, preformed, fate in rabbits and rhesus monkeys, 19 s
— reaction in human serum, antigenic and molecular alterations of C3 in fluid phase during, demonstration of new conversion product, C3x, 656
— response against erythrocytes and thymus metabolism, effect of growth hormone on, 1095
— response, antigen modulation of, effect of delayed challenge on affinity of anti-dinitrophenylated bovine γ-globulin antibody produced in adoptive recipients, 1453
— response, cell-to-cell interaction in, contribution of thymus-derived cells and antibody-forming cell precursors to immunological memory, 66
— response, cell-to-cell interaction in, requirement for differentiation of thymus-derived cells, 1266
— response genes, specific, demonstration in random-bred guinea pigs that responsiveness to copolymer of L-glutamic acid and L-tyrosine is predicated upon possession of distinct strain 13 histocompatibility specificity, 1538

Immune response genes, specific, dominant genetic control of immune responsiveness to copolymers of L-glutamic acid and L-alanine an L-glutamic acid and L-tyrosine, 458
— response genes, specific, GA and GT, linkage to histocompatibility genotypes, 1529
— response genes, specific, of random-bred Hartley guinea pigs, relationship between poly-L-lysine gene and genes controlling immune responsiveness to copolymers of L-glutamic acid and L-alanine and L-glutamic acid and L-tyrosine, 471
— response, humoral, immunoglobulins on surface of thymus-derived cells engaged in initiation of, 618
— response, magnitude and heterogeneity, influence of genetic factors on, 48
— response and passive antibody, factors which determine enhancement and suppression, 833
— response regulation, differential effect of passively administered antibody on thymus-derived and bone marrow–derived lymphocytes, 577
— response, relationship between antigenic structure and requirement for thymus-derived cells in, 103
— response to chemically modified flagellin, evidence for fundamental relationship between humoral and cell-mediated immunity, 21
— response to chemically modified flagellin, induction of antibody tolerance by acetoacetylated derivatives of protein, 1
— response to erythrocytes, in vivo requirement for radiation-resistant cell in, 1201
— responses for two immunopotent regions within poly-(Phe,Glu)-poly-Pro--poly-Lys, contribution of bone marrow cells and lack of expression of thymocytes in genetic controls of, 141
Immune responses in vitro, development of primary γM, γG, and γA plaque-forming cell responses in spleen cell cultures stimulated with heterologous erythrocytes, 395
— responsiveness to ovalbumin and ovomucoid, *H-2*–linked genetic control of, 1335
— system cells, immunoglobulin and other surface antigens of, 815
Immunity, cell-mediated, and antibody responses in respiratory tract after local and systemic immunization, 482
—, cell-mediated, to infection, cortisone acetate action on, suppression of host-cell proliferation and alteration of cellular composition of infective foci, 1485
—, humoral and cell-mediated, evidence for fundamental relationship between, immune response to chemically modified flagellin, 21
Immunization, differences in antigen responsiveness between peritoneal exudate and lymph node lymphocytes in, 1170
—, local and systemic, cell-mediated immunity and antibody responses in respiratory tract after, 482
—, specificity and nature of receptors on dinitrophenylated albumin-^{125}I-binding cells, 517
Immunobiology, peculiar, of bone marrow allografts, graft rejection, irradiated response, 83
—, peculiar, of bone marrow allografts, rejection of parental grafts by resistant F_1 hybrid mice, 1513
Immunochemical studies on blood groups, comparative study of reaction of A_1 and A_2 blood group glycoproteins with human anti-A, 439
— studies on vesicular fluid, antigens and autoantigens of seminal vesicle, 120
Immunochemistry of common antigen

of Enterobacteriaceae (Kunin), relation to lipopolysaccharide core structure, 565
Immunocompetent cells, specific surface antigenic markers on bursa and thymus cells, 1036
— cells, specificity and nature of receptors on dinitrophenylated albumin-^{125}I–binding cells, 517
— cells, specificity and nature of receptors on dinitrophenylated albumin-^{125}I–binding normal lymphocytes, 495
Immunocytes, IgA-producing, Peyer's patches, enriched source of precursors for, 188
Immunofluorescence, value in human renal disease study, 242 s
Immunogenic, non-, hapten-polypeptide conjugates, conditions for induction of hapten-specific tolerance or stimulation of anti-hapten anamnestic responses by, 201
Immunogenicity, comparative, of major transplantable organs, genetic definition of DL-A system of canine histocompatibility studied in closely bred colony with particular reference to, 1222
Immunoglobulin, cell surface, from splenic lymphocytes, isolation and characterization, 242
— E, electron microscopic localization on surface membrane of human basophils, 1403
— and other surface antigens of immune system cells, 815
— structures from surface of chronic lymphocytic leukemia cells, characterization, 265
Immunoglobulins, anti-, complement, and rheumatoid factor, interaction of infectious virus–antibody complexes with, 41 s
— on surface of thymus-derived cells engaged in initiation of humoral immune response, 618
—, surface, on thymus and thymus-derived lymphoid cells, 1005
Immunohistologic studies of synoviocytes and synovial exudate cells, 296 s
Immunologic injury of renal homografts, 193 s
— tolerance and nonantigenicity, role of carrier in induction of tolerance to hapten, 1046
Immunological memory, contribution of thymus-derived cells and antibody-forming cell precursors to, cell-to-cell interaction in immune response, 66
— relationship between normal and defective enzyme, β-D-galactosidase, 751
— release of histamine and slow-reacting substance of anaphylaxis from human lung, modulation by agents influencing cellular levels of cyclic 3′,5′-adenosine monophosphate, 136 s
Immunologically competent population from bone marrow cells, contribution of thymic humoral factor to development of, 786
Immunopotent regions, two, within poly-(Phe,Glu)-poly-Pro--poly-Lys, contribution of bone marrow cells and lack of expression of thymocytes in genetic controls of immune responses for, 141
Immunoreactants in rheumatoid synovial effusions, 276 s
Immunosuppressant from Group A streptococci, biological characterization, 1253
Impetigo, human, skin infection simulating, interaction between staphylococci and Group A streptococci, 588
Infection, cortisone acetate action on cell-mediated immunity to, suppression of host-cell proliferation and alteration of cellular composition of infective foci, 1485
—, gonococcus, pili and adhesion zones, relation to gonococcal growth patterns, 886
—, skin, simulating human impetigo, interaction between staphylococci

and Group A streptococci, 588
Infections and transformation of mouse peritoneal macrophages by simian virus 40, 335
Infections, viral, chronic, immune complex disease in, 32 s
Infectious virus–antibody complexes, interaction with anti-immunoglobulins, complement, and rheumatoid factor, 41 s
Inflammatory exudates, role of C5 in accumulation of polymorphonuclear leukocytes in, 1131
Inheritance of individual antigenic specificities of antibodies to streptococcal carbohydrates, 532
Inhibitors of protein synthesis and synchronized melanoma cells, studies with, and activation of macrophage DNA synthesis in macrophage-melanoma cell heterokaryons, 935
Injection, pre-, with structurally unrelated macromolecules, increase in hapten-specific plaque-forming cells after, 693
Injury, immunologic, of renal homografts, 193 s
–, tissue, adherence, and release of constituents, interaction of cells with immune complexes, 114 s
Intrahepatic expression of serum hepatitis virus–associated antigens, 871
Intravenous ovalbumin, cutaneous basophil, Jones-Mote, hypersensitivity after tolerogenic doses of, 630
Iodine-125-binding, albumin–, cells, specificity and nature of receptors on, 517
—, albumin–, dinitrophenylated normal lymphocytes, specificity and nature of receptors on, 495
Irradiated response, graft rejection, peculiar immunobiology of bone marrow allografts, 83

JOINT fluid and serum of rheumatoid arthritis patients, use of monoclonal rheumatoid factors as reagents for demonstration of occurrence of γ-globulin complexes in, 286 s
Jones-Mote cutaneous basophil hypersensitivity after tolerogenic doses of intravenous ovalbumin, 630

KIDNEY disease study, human, value of immunofluorescence in, 242 s
— homografts, immunologic injury of, 193 s
Kinin-forming system, first component, in human and rabbit plasma, relationship to clotting factor XII (Hageman factor), 986

LABORATORY recognition of M types of Group A streptococci, new approaches for, 1298
Leukemia cells, lymphocytic, chronic, characterization of immunoglobulin structures from surface of, 265
— evoked with 7,8,12-trimethylbenz-(a)anthracene, changes in spleen and thymus, 1285
Leukocytes exposed to immune complexes and other particles, mechanisms of lysosomal enzyme release from, 149 s
—, neutrophilic polymorphonuclear, development in human bone marrow, origin and content of azurophil and specific granules, 907
—, polymorphonuclear, in inflammatory exudates, role of C5 in accumulation of, 1131
–, polymorphonuclear, and mycoplasma, interaction in vitro between, 1417
—, polymorphonuclear, and platelets in human blood, toxic effects of streptococcal M protein on, 351
Leukotactic factors, complement-derived, in pathological fluids, 109 s
Light and electron microscopic study,

combined, on tissue grafts established in ear chambers, 963
Lipopolysaccharide core structure, relation of immunochemistry of common antigen of Enterobacteriaceae (Kunin) to, 565
Lung, human, immunological release of histamine and slow-reacting substance of anaphylaxis from, modulation by agents influencing cellular levels of cyclic 3′,5′-adenosine monophosphate, 136 s
Lupus erythematosus, canine, systemic, genetic analysis of established breeding colony, 417
— erythematosus, systemic, and other hypocomplementemic states, characterization of high and low molecular weight types of Clq precipitins in sera of patients with, 228 s
— erythematosus, systemic, prototype of immune complex nephritis in man, 169 s
Lymph node and peritoneal exudate lymphocytes, differences in antigen responsiveness between, 1170
Lymphocyte membrane dynamics, metabolic release of cell surface proteins, 1373
Lymphocyte-mediated cytotoxicity in vitro, effect of enhancing antisera, 1238
Lymphocytes, antigen-reactive, compartmentalization in desensitized guinea pigs, 741
—, ^{51}Cr-labeled, distribution into antigen-stimulated mice, trapping of, 224
—, cytotoxic, and alloantibody-forming cells, development in graft-*versus*-host reaction, cellular and humoral response to transplantation antigens, 553
—from conventional and germfree rats, reactivity to allogeneic and xenogeneic cell surface antigens, quantitative studies, 857
Lymphocytes, hypersensitive, development in cell culture, 1062
—, normal, dinitrophenylated albumin-^{125}I-binding, specificity and nature of receptors on, 495
—, peritoneal exudate and lymph node, differences in antigen responsiveness between, 1170
—, receptor-bearing, cells mediating specific in vitro cytotoxicity, detection of, 1385
—, splenic, isolation and characterization of immunoglobulin from, 242
—, thymus-derived and bone marrow-derived, differential effect of passively administered antibody on regulation of immune response, 577
Lymphocytic leukemia cells, chronic, characterization of immunoglobulin structures from surface of, 265
Lymphoid cell dependence of eosinophil response to antigen, 801
—cells, thymus and thymus-derived, surface immunoglobulins on, 1005
Lysosomal enzyme release from leukocytes exposed to immune complexes and other particles, mechanisms, 149 s
Lysosomes, fusion with phagosomes, response of cultured macrophages to *Mycobacterium tuberculosis*, 713

MACROMOLECULES, structurally unrelated, increase in hapten-specific plaque-forming cells after preinjection with, 693
Macrophage–L cell hybrids, preparation and properties, 1187
Macrophage, cholesterol metabolism in, alteration of subcellular exchangeable compartments and exchange in other cell types, 1570
—, cholesterol metabolism in, regulation of exchange, 1545

Macrophage-melanoma cell heterokaryons, activation of macrophage DNA synthesis, studies with inhibitors of protein synthesis and with synchronized melanoma cells, 935
— cell heterokaryons, unmasking macrophage-specific membrane receptor, 947
Macrophage-specific membrane receptor, unmasking in macrophage-melanoma cell heterokaryons, 947
Macrophages, cultured, response to *Mycobacterium tuberculosis*, observations on fusion of lysosomes with phagosomes, 713
—, peritoneal, infection and transformation by simian virus 40, 335
Man, anti-A, comparative study of reaction of A_1 and A_2 blood group glycoproteins with, 439
—, basophils, surface membrane, electron microscopic localization of immunoglobulin E on, 1403
—, blood, toxic effects of streptococcal M protein on platelets and polymorphonuclear leukocytes in, 351
—, bone marrow, development of neutrophilic polymorphonuclear leukocytes in, origin and content of azurophil and specific granules, 907
—, glomerulonephritis, role of streptococci in, 180 s
—, immune complex nephritis in, systemic lupus erythematosus prototype of, 169 s
—, impetigo, skin infection simulating, interaction between staphylococci and Group A streptococci, 588
—, lung, immunological release of histamine and slow-reacting substance of anaphylaxis from, modulation by agents influencing cellular levels of cyclic 3′,5′-adenosine monophosphate, 136 s
—, marrow, cultured, heme and globin synthesis enhancement by 5β-H steroid metabolites, 1501
Man and rabbit plasma, first component of kinin-forming system in, relationship to clotting factor XII (Hageman factor), 986
—, renal disease study, value of immunofluorescence in, 242 s
—, sera, antibodies to polynucleotides in, antigenic specificity and relation to disease, 294
—, serum, antigenic and molecular alterations of C3 in fluid phase during immune reaction in, demonstration of new conversion product, C3x, 656
Marrow, bone, allografts, peculiar immunobiology, graft rejection, irradiated response, 83
—, bone, allografts, peculiar immunobiology, rejection of parental grafts by resistant F_1 hybrid mice, 1513
—, bone, and cells, thymus, role in delayed hypersensitivity, 1144
—, bone, graft rejection, genetic control, determinant-specific difference of reactivity in two pairs of inbred mouse strains, 281
—, bone, human, development of neutrophilic polymorphonuclear leukocytes in, origin and content of azurophil and specific granules, 907
— cells, bone, contribution, and lack of expression of thymocytes, in genetic controls of immune responses for two immunopotent regions within poly-(Phe,Glu)-poly-Pro--poly-Lys, 141
— cells, bone, contribution of thymic humoral factor to development of immunologically competent population from, 786
—, human, cultured, heme and globin synthesis enhancement by 5β-H steroid metabolites, 1501
Marrow-derived, bone, and thymus-derived lymphocytes, differential

effect of passively administered antibody on regulation of immune response, 577
Melanoma-macrophage cell heterokaryons, activation of macrophage DNA synthesis, studies with inhibitors of protein synthesis and with synchronized melanoma cells, 935
— cell heterokaryons, unmasking macrophage-specific membrane receptor, 947
Membrane dynamics, lymphocyte, metabolic release of cell surface proteins, 1373
— receptor, macrophage-specific, unmasking in macrophage-melanoma cell heterokaryons, 947
—, surface, of human basophils, electron microscopic localization of immunoglobulin E on, 1403
— transport of nonelectrolytes, phagocytosis effect on, 1016
Membranoproliferative glomerulonephritis, chronic, with hypocomplementemia, 208 s
Memory, immunological, contribution of thymus-derived cells and antibody-forming cell precursors to, cell-to-cell interaction in immune response, 66
Mesentery, germfree rat, vascular smooth muscle, tone and reactivity of, 846
Metabolic release of cell surface proteins, lymphocyte membrane dynamics, 1373
Metabolism, cholesterol, in macrophage, alteration of subcellular exchangeable compartments and exchange in other cell types, 1570
—, cholesterol, in macrophage, regulation of exchange, 1545
—, thymus, and immune response against erythrocytes, effect of growth hormone on, 1095
Metabolites, 5β-H steroid, enhancement of heme and globin synthesis in cultured human marrow by, 1501
Microscopic, electron, localization of immunoglobulin E on surface membrane of human basophils, 1403
— study, combined light and electron, on tissue grafts established in ear chambers, 963
Molecular and antigenic alterations of C3 in fluid phase during immune reaction in human serum, demonstration of new conversion product, C3x, 656
— weight types, high and low, C1q precipitins in sera of patients with systemic lupus erythematosus and other hypocomplementemic states, characterization of, 228 s
Monkeys, rhesus, and rabbits, fate of preformed immune complexes in, 19 s
Monoclonal rheumatoid factors, use as reagents for demonstration of occurrence of γ-globulin complexes in serum and joint fluid of rheumatoid arthritis patients, 286 s
Monophosphate, 3′,5′-adenosine, cyclic, cellular levels, modulation of immunological release of histamine and slow-reacting substance of anaphylaxis from human lung by agents influencing, 136 s
Morphological and biochemical study of influence of postnatal development on drug-induced hepatic porphyria and cytochrome P-450 synthesis, 1349
Muscle, vascular smooth, in germfree rat mesentery, tone and reactivity of, 846
Mutation, virus, structural changes of Shope papilloma virus–induced arginase associated with, 1442
Mycobacteria, attenuated, behavior in neonatal and adult organs, 366
Mycobacterium tuberculosis, response of cultured macrophages to, observations on fusion of lysosomes with phagosomes, 713
Mycoplasma and polymorphonuclear

leukocytes, interaction in vitro between, 1417
Myeloma cells, synthesis, assembly, and secretion of γ-globulin by, assembly of three subclasses of IgG, 1316

NEONATAL and adult organs, behavior of attentuated mycobacteria in, 366
Nephritis, glomerulo-, human, role of streptococci in, 180 s
—, glomerulo-, immune complex, of New Zealand mice, pathogenesis, 65 s
—, glomerulo-, membranoproliferative, chronic, with hypocomplementemia, 208 s
—, immune complex, in man, systemic lupus erythematosus prototype of, 169 s
Neutrophilic polymorphonuclear leukocytes, development in human bone marrow, origin and content of azurophil and specific granules, 907
Node, lymph, and peritoneal exudate lymphocytes, differences in antigen responsiveness between, 1170
Nucleic acid, deoxyribo-, macrophage, activation of synthesis, studies with inhibitors of protein synthesis and with synchronized melanoma cells in macrophage-melanoma cell heterokaryons, 935
— acids, antibodies to, immune cell cooperation, and viruses in New Zealand mice, 52 s
Nude, mutation in mice, abnormal development of thymus, 681

ORGANS, neonatal and adult, behavior of attenuated mycobacteria in, 366
—, transplantable, major, genetic definition of DL-A system of canine histocompatibility studied in closely bred colony with particular reference to comparative immunogenicity of, 1222
Ovalbumin, intravenous, cutaneous basophil, Jones-Mote, hypersensitivity after tolerogenic doses of, 630
Ovalbumin and ovomucoid, *H-2*–linked genetic control of immune responsiveness to, 1335
Ovomucoid and ovalbumin *H-2*–linked genetic control of immune responsiveness to, 1335

PAPILLOMA, Shope, virus-induced arginase, structural changes associated with mutation of virus, 1442
Parental grafts, rejection by resistant F_1 hybrid mice, peculiar immunobiology of bone marrow allografts, 1513
Pathogenesis of immune complex glomerulonephritis of New Zealand mice, 65 s
Pathological fluids, complement-derived leukotactic factors in, 109 s
Peritoneal exudate and lymph node lymphocytes, differences in antigen responsiveness between, 1170
— macrophages, infection and transformation by simian virus 40, 335
Peyer's patches, enriched source of precursors for IgA-producing immunocytes, 188
Phagocytosis, effect on membrane transport of nonelectrolytes, 1016
Phagosomes, fusion of lysosomes with, response of cultured macrophages to *Mycobacterium tuberculosis*, 713
Pili and adhesion zones, relation to gonococcal growth patterns, 886
Plaque-forming cell responses, primary γM, γG, and γA, development in spleen cell cultures stimulated with heterologous erythrocytes, 395
— cells, young, identification by thymidine-^{3}H labeling, 1155
— hapten-specific cells, increase after

preinjection with structurally unrelated macromolecules, 693
Plasma, human and rabbit, first component of kinin-forming system in, relationship to clotting factor XII (Hageman factor), 986
Platelet, bactericidal protein, 1114
Platelets and polymorphonuclear leukocytes in human blood, toxic effects of streptococcal M protein on, 351
Pneumococcal strains, same and different, nonidentity of cell wall and soluble cell wall–like polysaccharides derived from, 600
Pneumococcus with soluble cell wall–like polysaccharide, capsulation, 600
Polymorphonuclear leukocytes in inflammatory exudates, role of C5 in accumulation of, 1131
— leukocytes and mycoplasma, interaction in vitro between, 1417
— leukocytes, neutrophilic, development in human bone marrow, origin and content of azurophil and specific granules, 907
— leukocytes and platelets in human blood, toxic effects of streptococcal M protein on, 351
Polynucleotides in human sera, antibodies to, antigenic specificity and relation to disease, 294
Polypeptide, hapten-, conjugates, nonimmunogenic, conditions for induction of hapten-specific tolerance or stimulation of anti-hapten anamnestic responses by, 201
Polysaccharides, cell wall and soluble cell wall–like, derived from same and from different pneumococcal strains, nonidentity of, 600
Porphyria, hepatic, drug-induced, and cytochrome P-450 synthesis, biochemical and morphological study of influence of postnatal development on, 1349
Postnatal development, influence on drug-induced hepatic porphyria and cytochrome P-450 synthesis, biochemical and morphological study, 1349
Precipitins, C1q, in sera of patients with systemic lupus erythematosus and other hypocomplementemic states, characterization of high and low molecular weight types, 228 s
Protein, bactericidal, platelet, 1114
—, flagellin, induction of antibody tolerance by means of acetoacetylated derivatives of, 1
—, streptococcal M, toxic effects on platelets and polymorphonuclear leukocytes in human blood, 351
— synthesis, inhibitors of, and synchronized melanoma cells, studies with, and activation of macrophage DNA synthesis in macrophage-melanoma cell heterokaryons, 935
Proteins, cell surface, metabolic release, lymphocyte membrane dynamics, 1373

RADIATION, ^{125}I-albumin–binding dinitrophenylated cells, specificity and nature of receptors on, 517
—, ^{125}I-albumin–binding dinitrophenylated normal lymphocytes, specificity and nature of receptors on, 495
Radiation-resistant cell in immune response to erythrocytes, in vivo requirement for, 1201
Radioactive chromium, lymphocytes labeled with, distribution into antigen-stimulated mice, lymphocyte trapping, 224
Reactions, Shwartzman, localized and generalized, prevention by anticomplementary agent, cobra venom factor, 642
Reagents, use of monoclonal rheumatoid factors for demonstration of occurrence of γ-globulin complexes in serum and joint fluid of rheumatoid arthritis patients, 286 s

Receptor, membrane, macrophage-specific, unmasking in macrophage-melanoma cell heterokaryons, 947
Receptor-bearing lymphocytes, cells mediating specific in vitro cytotoxicity, detection of, 1385
Receptors, cellular, effect of anti-alloantiserum on recognition of transplantation antigens, 1083
— on dinitrophenylated albumin-^{125}I–binding cells, specificity and nature of, 517
— on dinitrophenylated albumin-^{125}I–binding normal lymphocytes, specificity and nature of, 495
Rejection of parental grafts by resistant F_1 hybrid mice, peculiar immunobiology of bone marrow allografts, 1513
Renal. *See* Kidney.
Resistance of F_1 hybrid mice, rejection of parental grafts by, peculiar immunobiology of bone marrow allografts, 1513
Resistant, radiation-, cell in immune response to erythrocytes, in vivo requirement for, 1201
Respiratory tract, cell-mediated immunity and antibody responses in, after local and systemic immunization, 482
Rhesus monkeys and rabbits, fate of preformed immune complexes in, 19 s
Rheumatic diseases, elevation and depletion of ninth complement component in, hemolytic assay, 259 s
Rheumatoid arthritis and other connective tissue diseases, virologic studies in, 313 s
— arthritis patients, serum and joint fluid, use of monoclonal rheumatoid factors as reagents for demonstration of occurrence of γ-globulin complexes in, 286 s
— factor, anti-immunoglobulins, and complement, interaction of infectious virus–antibody complexes with, 41 s
Rheumatoid synovial effusions, immunoreactants in, 276 s
Ribonucleic acid, deoxy-, macrophage, activation of synthesis, studies with inhibitors of protein synthesis and with synchronized melanoma cells in macrophage-melanoma cell heterokaryons, 935

SECRETION, synthesis, and assembly of γ-globulin by myeloma cells, assembly of three subclasses of IgG, 1316
Seminal vesicle, antigens and autoantigens, immunochemical studies on vesicular fluid, 120
Sera, human, antibodies to polynucleotides in, antigenic specificity and relation to disease, 294
— of C4-deficient guinea pigs, in vitro studies of complement function in, 176
— of patients with systemic lupus erythematosus and other hypocomplementemic states, characterization of high and low molecular weight types of C1q precipitins in, 228 s
Serum hepatitis virus–associated antigens, intrahepatic expression of, 871
—, human, antigenic and molecular alterations of C3 in fluid phase during immune reaction in, demonstration of new conversion product, C3x, 656
— and joint fluid of rheumatoid arthritis patients, use of monoclonal rheumatoid factors as reagents for demonstration of occurrence of γ-globulin complexes in, 286 s
—, modulation of $C\bar{1}$ function by fragment derived from, effect on early components of complement, 1466
— sickness, acute and chronic, quantitation of, 7 s

Shope papilloma virus–induced arginase, structural changes associated with mutation of virus, 1442
Shwartzman reactions, localized and generalized, prevention by anticomplementary agent, cobra venom factor, 642
Sickness, serum, acute and chronic, quantitation of, 7 s
Simian virus 40, infection and transformation of mouse peritoneal macrophages by, 335
Skin basophil, Jones-Mote, hypersensitivity after tolerogenic doses of intravenous ovalbumin, 630
—, infection simulating human impetigo, interaction between staphylococci and Group A streptococci, 588
Smooth muscle, vascular, in germfree rat mesentery, tone and reactivity of, 846
Specific, determinant-, difference of reactivity in two pairs of inbred mouse strains, genetic control of bone marrow graft rejection, 281
—, hapten-, plaque-forming cells, increase after preinjection with structurally unrelated macromolecules, 693
— immune response genes, demonstration in random-bred guinea pigs that responsiveness to copolymer of L-glutamic acid and L-tyrosine is predicated upon possession of distinct strain 13 histocompatibility specificity, 1538
— immune response genes, dominant genetic control of immune responsiveness to copolymers of L-glutamic acid and L-alanine and L-glutamic acid and L-tyrosine, 458
— immune response genes, GA and GT, linkage to histocompatibility genotypes, 1529
— immune response genes of random-bred Hartley guinea pigs, relationship between poly-L-lysine gene and genes controlling immune responsiveness to copolymers of L-glutamic acid and L-alanine and L-glutamic acid and L-tyrosine, 471
Specificities, antigenic, individual, of antibodies to streptococcal carbohydrates, inheritance of, 532
Specificity, antigenic, and relation to disease of antibodies to polynucleotides in human sera, 294
— and nature of receptors on dinitrophenylated albumin-^{125}I–binding cells, 517
— and nature of receptors on dinitrophenylated albumin-^{125}I–binding normal lymphocytes, 495
— of fixation loci for hemocytotropic antibodies, 381
Spleen cell cultures, stimulated with heterologous erythrocytes, development of primary γM, γG, and γA plaque-forming cell responses in, 395
— and thymus in leukemia evoked with 7,8,12-trimethylbenz(a)anthracene, changes in, 1285
Splenic lymphocytes, isolation and characterization of immunoglobulin from, 242
Staphylococci and Group A streptococci, interaction between in skin infection simulating human impetigo, 588
Steroid metabolites, 5β-H, enhancement of heme and globin synthesis in cultured human marrow by, 1501
Stimulation of anti-hapten anamnestic responses by nonimmunogenic hapten-polypeptide conjugates or induction of hapten-specific tolerance, conditions for, 201
Streptococcal carbohydrates, inheritance of individual antigenic specificities of antibodies to, 532
— M protein, toxic effects on platelets and polymorphonuclear leukocytes in human blood, 351
Streptococci, Group A, biological characterization of immunosuppressant from, 1253

Streptococci, Group A, M types, new approaches for laboratory recognition of, 1298
—, Group A, and staphylococci, interaction between in skin infection simulating human impetigo, 588
—, role in human glomerulonephritis, 180 s
Synovial cells in culture, properties, 306 s
— effusions, rheumatoid, immunoreactants in, 276 s
— exudate cells and synoviocytes, immunohistologic studies, 296 s
Synoviocytes and synovial exudate cells, immunohistologic studies, 296 s

THYMIC humoral factor, contribution to development of immunologically competent population from bone marrow cells, 786
Thymidine-^{3}H labeling, identification of young plaque-forming cells by, 1155
Thymocytes, lack of expression, and contribution of bone marrow cells in genetic controls of immune responses for two immunopotent regions within poly-(Phe,Glu)-poly-Pro--poly-Lys, 141
Thymus, abnormal development in nude mice, 681
— and bone marrow cells, role in delayed hypersensitivity, 1144
— and bursa cells, specific surface antigenic markers on, 1036
— metabolism and immune response against erythrocytes, effect of growth hormone on, 1095
— and spleen in leukemia evoked with 7,8,12-trimethylbenz(a)anthracene, changes in, 1285
— and thymus-derived lymphoid cells, surface immunoglobulins on, 1005
Thymus-derived and bone marrow–derived lymphocytes, differential effect of passively administered antibody on regulation of immune response, 577
— cells and antibody-forming cell precursors, contribution to immunological memory, cell-to-cell interaction in immune response, 66
— cells, differentiation, requirement in cell-to-cell interaction in immune response, 1266
— cells engaged in initiation of humoral immune response, immunoglobulins on surface of, 618
— cells, requirement for, and antigenic structure in immune response, relationship between, 103
— and thymus lymphoid cells, surface immunoglobulins on, 1005
Tissue, connective, diseases, and rheumatoid arthritis, virologic studies in, 313 s
— grafts established in ear chambers, combined light and electron microscopic study, 963
— injury, adherence, and release of constituents, interaction of cells with immune complexes, 114 s
Tissues, mechanisms involved in deposition of immune complexes in, 75 s
Tolerance to hapten, role of carrier in induction of, nonantigenicity and immunologic tolerance, 1046
Tolerogenic doses of intravenous ovalbumin, cutaneous basophil, Jones-Mote, hypersensitivity after, 630
Toxic effects of streptococcal M protein on platelets and polymorphonuclear leukocytes in human blood, 351
Transformation and infection of mouse peritoneal macrophages by simian virus 40, 335
Transplantable organs, major, genetic definition of DL-A system of

canine histocompatibility studied in closely bred colony with particular reference to comparative immunogenicity of, 1222
Transplantation antigens, cellular and humoral response to, development of alloantibody-forming cells and cytotoxic lymphocytes in graft-*versus*-host reaction, 553
— antigens, effect of anti-alloantiserum on recognition of, 1083
Transport, membrane, of nonelectrolytes, phagocytosis effect on, 1016
7,8,12-Trimethylbenz(a)anthracene, changes in spleen and thymus in leukemia evoked with, 1285
L-Tyrosine and L-glutamic acid, copolymer of, demonstration in random-bred guinea pigs that responsiveness to is predicated upon possession of distinct strain 13 histocompatibility specificity, 1538
— and L-glutamic acid and L-glutamic acid and L-alanine, dominant genetic control of immune responsiveness to copolymers of, 458
— and L-glutamic acid and L-glutamic acid and L-alanine in random-bred Hartley guinea pigs, relationship between poly-L-lysine gene and genes controlling immune responsiveness to copolymers of, 471

VASCULAR smooth muscle in germfree rat mesentery, tone and reactivity of, 846
Vasculitis in association with Australia antigen, 330 s
Venom factor, cobra, anticomplementary agent, prevention of localized and generalized Shwartzman reactions by, 642
Vesicle, seminal, antigens and autoantigens, immunochemical studies on vesicular fluid, 120
Vesicular fluid, immunochemical studies, antigens and autoantigens of seminal vesicle, 120
Viral infections, chronic, immune complex disease in, 32 s
— neutralization, significance of antibody bivalence in, 1431
Virologic studies in rheumatoid arthritis and other connective tissue diseases, 313 s
Virus, simian 40, infection and transformation of mouse peritoneal macrophages by, 335
Virus-antibody complexes, infectious, interaction with anti-immunoglobulins, complement, and rheumatoid factor, 41 s
Virus-associated antigens, serum hepatitis, intrahepatic expression of, 871
Virus-induced arginase, Shope papilloma, structural changes associated with mutation of virus, 1442
Viruses, immune cell cooperation, and antibodies to nucleic acids in New Zealand mice, 52 s

WEIGHT, molecular, high and low types, C1q precipitins in sera of patients with systemic lupus erythematosus and other hypocomplementemic states, characterization of, 228 s

XENOGENEIC and allogeneic cell surface antigens, reactivity of lymphocytes from conventional and germfree rats to, quantitative studies, 857

THE JOURNAL
OF
EXPERIMENTAL MEDICINE

EDITED BY
RENE DUBOS HENRY G. KUNKEL
MACLYN McCARTY

ADVISORY EDITORS

ROBERT AUERBACH
K. FRANK AUSTEN
ALEXANDER G. BEARN
BARUJ BENACERRAF
RUPERT E. BILLINGHAM
ZANVIL A. COHN
LEWIS K. DAHL
FRANK J. DIXON
JAMES G. HIRSCH
ATTALLAH KAPPAS
HANS J. MÜLLER-EBERHARD
LLOYD J. OLD
CHANDLER A. STETSON
IGOR TAMM
JONATHAN W. UHR

VOLUME 134
1971

PUBLISHED MONTHLY BY
THE ROCKEFELLER UNIVERSITY PRESS

Copyright © 1971 by The Rockefeller University Press

CONTENTS

No. 1, JULY 1, 1971

PAGE

C. R. PARISH. Immune response to chemically modified flagellin. I. Induction of antibody tolerance to flagellin by acetoacetylated derivatives of the protein 1

C. R. PARISH. Immune response to chemically modified flagellin. II. Evidence for a fundamental relationship between humoral and cell-mediated immunity 21

KLAUS EICHMANN, DIETMAR G. BRAUN, and RICHARD M. KRAUSE. Influence of genetic factors on the magnitude and the heterogeneity of the immune response in the rabbit 48

J. F. A. P. MILLER and J. SPRENT. Cell-to-cell interaction in the immune response. VI. Contribution of thymus-derived cells and antibody-forming cell precursors to immunological memory 66

GUSTAVO CUDKOWICZ and MICHAEL BENNETT. Peculiar immunobiology of bone marrow allografts. I. Graft rejection by irradiated responder mice 83

MARC FELDMANN and ANTONY BASTEN. The relationship between antigenic structure and the requirement for thymus-derived cells in the immune response 103

FRANK ORSINI and SIDNEY SHULMAN. The antigens and autoantigens of the seminal vesicle. I. Immunochemical studies on guinea pig vesicular fluid 120

EDNA MOZES and G. M. SHEARER. Contribution of bone marrow cells and lack of expression of thymocytes in genetic controls of immune responses for two immunopotent regions within poly-(Phe, Glu)-poly-Pro--poly-Lys in inbred mouse strains 141

LEONARD ELLMAN, IRA GREEN, FRANCIS JUDGE, and MICHAEL M. FRANK. In vivo studies in C4-deficient guinea pigs 162

MICHAEL M. FRANK, JOSEPH MAY, THELMA GAITHER, and LEONARD ELLMAN. In vitro studies of complement function in sera of C4-deficient guinea pigs 176

SUSAN W. CRAIG and JOHN J. CEBRA. Peyer's patches: an enriched source of precursors for IgA-producing immunocytes in the rabbit 188

DAVID H. KATZ, JOSEPH M. DAVIE, WILLIAM E. PAUL, and BARUJ BENACERRAF. Carrier function in anti-hapten antibody responses. IV. Experimental conditions for the induction of hapten-specific

PAGE

tolerance or for the stimulation of anti-hapten anamnestic responses by "nonimmunogenic" hapten-polypeptide conjugates 201

MARION M. ZATZ and EUGENE M. LANCE. The distribution of ^{51}Cr-labeled lymphocytes into antigen-stimulated mice. Lymphocyte trapping 224

ELLEN S. VITETTA, SONIA BAUR, and JONATHAN W. UHR. Cell surface immunoglobulin. II. Isolation and characterization of immunoglobulin from mouse splenic lymphocytes 242

TROND ESKELAND, EVA KLEIN, MASAHARU INOUE, and BO JOHANSSON. Characterization of immunoglobulin structures from the surface of chronic lymphocytic leukemia cells 265

GUSTAVO CUDKOWICZ. Genetic control of bone marrow graft rejection. I. Determinant-specific difference of reactivity in two pairs of inbred mouse strains 281

D. KOFFLER, R. CARR, V. AGNELLO, R. THOBURN, and H. G. KUNKEL. Antibodies to polynucleotides in human sera: antigenic specificity and relation to disease 294

No. 2, AUGUST 1, 1971

NOEL L. WARNER and MALCOLM A. S. MOORE. Defects in hematopoietic differentiation in NZB and NZC mice 313

J. MAUEL and V. DEFENDI. Infection and transformation of mouse peritoneal macrophages by simian virus 40 335

EDWIN H. BEACHEY and GENE H. STOLLERMAN. Toxic effects of streptococcal M protein on platelets and polymorphonuclear leukocytes in human blood 351

RICHARD COSTELLO, TAKATERU IZUMI, and TAKEHIKO SAKURAMI. Behavior of attenuated mycobacteria in organs of neonatal and adult mice 366

JACK R. BATTISTO, DANIEL BUDMAN, and ROBERT FREEDMAN. Specificity of fixation loci for homocytotropic antibodies 381

CARL W. PIERCE, BARBARA M. JOHNSON, HARRIET E. GERSHON, and RICHARD ASOFSKY. Immune responses in vitro. III. Development of primary γM, γG, and γA plaque-forming cell responses in mouse spleen cell cultures stimulated with heterologous erythrocytes 395

ROBERT M. LEWIS and ROBERT S. SCHWARTZ. Canine systemic lupus erythematosus. Genetic analysis of an established breeding colony ... 417

CARLOS MORENO, ARNE LUNDBLAD, and ELVIN A. KABAT. Immunochemical studies on blood groups. LI. A comparative study of the reaction of A_1 and A_2 blood group glycoproteins with human anti-A 439

PAGE

HARRY G. BLUESTEIN, IRA GREEN, and BARUJ BENACERRAF. Specific immune response genes of the guinea pig. I. Dominant genetic control of immune responsiveness to copolymers of L-glutamic acid and L-alanine and L-glutamic acid and L-tyrosine 458

HARRY G. BLUESTEIN, IRA GREEN, and BARUJ BENACERRAF. Specific immune response genes of the guinea pig. II. Relationship between the poly-L-lysine gene and the genes controlling immune responsiveness to copolymers of L-glutamic acid and L-alanine and L-glutamic acid and L-tyrosine in random-bred Hartley guinea pigs 471

ROBERT H. WALDMAN and CHRISTOPHER S. HENNEY. Cell-mediated immunity and antibody responses in the respiratory tract after local and systemic immunization 482

JOSEPH M. DAVIE and WILLIAM E. PAUL. Receptors on immunocompetent cells. II. Specificity and nature of receptors on dinitrophenylated guinea pig albumin-^{125}I–binding lymphocytes of normal guinea pigs 495

JOSEPH M. DAVIE, ALAN S. ROSENTHAL, and WILLIAM E. PAUL. Receptors on immunocompetent cells. III. Specificity and nature of receptors on dinitrophenylated guinea pig albumin-^{125}I–binding cells of immunized guinea pigs 517

KLAUS EICHMANN and THOMAS J. KINDT. The inheritance of individual antigenic specificities of rabbit antibodies to streptococcal carbohydrates 532

J.-C. CEROTTINI, A. A. NORDIN, and K. T. BRUNNER. Cellular and humoral response to transplantation antigens. I. Development of alloantibody-forming cells and cytotoxic lymphocytes in the graft-*versus*-host reaction 553

No. 3, Pt. 1, September 1, 1971

STEN HAMMARSTRÖM, HANS ERIK CARLSSON, PETER PERLMANN, and SIGFRID SVENSSON. Immunochemistry of the common antigen of Enterobacteriaceae (Kunin). Relation to lipopolysaccharide core structure 565

JOHN W. KAPPLER, MICHAEL HOFFMANN, and RICHARD W. DUTTON. Regulation of the immune response. I. Differential effect of passively administered antibody on the thymus-derived and bone marrow–derived lymphocytes 577

ADNAN S. DAJANI and LEWIS W. WANNAMAKER. Experimental infection of the skin in the hamster simulating human impetigo. III. Interaction between staphylococci and Group A streptococci 588

GERALD SCHIFFMAN, DONALD L. BORNSTEIN, and ROBERT AUSTRIAN.

PAGE

Capsulation of pneumococcus with soluble cell wall-like polysaccharide. II. Nonidentity of cell wall and soluble cell wall-like polysaccharides derived from the same and from different pneumococcal strains 600

J. F. LESLEY, J. R. KETTMAN, and R. W. DUTTON. Immunoglobulins on the surface of thymus-derived cells engaged in the initiation of a humoral immune response 618

HAL B. RICHERSON. Cutaneous basophil (Jones-Mote) hypersensitivity after "tolerogenic" doses of intravenous ovalbumin in the guinea pig 630

JACK S. C. FONG and ROBERT A. GOOD. Prevention of the localized and generalized Shwartzman reactions by an anticomplementary agent, cobra venom factor 642

R. E. SPITZER, A. E. STITZEL, V. L. PAULING, N. C. DAVIS, and C. D. WEST. The antigenic and molecular alterations of C3 in the fluid phase during an immune reaction in normal human serum. Demonstration of a new conversion product, C3x 656

HENRY H. WORTIS, SANDRA NEHLSEN, and JOHN J. OWEN. Abnormal development of the thymus in "nude" mice 681

CHIN-YU WU and BERNARD CINADER. Antigenic promotion. Increase in hapten-specific plaque-forming cells after preinjection with structurally unrelated macromolecules 693

J. A. ARMSTRONG and P. D'ARCY HART. Response of cultured macrophages to *Mycobacterium tuberculosis*, with observations on fusion of lysosomes with phagosomes 713

STUART F. SCHLOSSMAN, HOWARD A. LEVIN, ROSS E. ROCKLIN, and JOHN R. DAVID. The compartmentalization of antigen-reactive lymphocytes in desensitized guinea pigs 741

FRANCO CELADA, JOHN ELLIS, KERSTIN BODLUND, and BORIS ROTMAN. Antibody-mediated activation of a defective β-D-galactosidase. II. Immunological relationship between the normal and the defective enzyme 751

SUSAN B. SPRING, KENNETH W. SCHROEDER, and ALFRED NISONOFF. Quantitative investigations of idiotypic antibodies. V. Factors affecting the persistence and replacement of clones of antibody-producing cells 765

MYRA SMALL and NATHAN TRAININ. Contribution of a thymic humoral factor to the development of an immunologically competent population from cells of mouse bone marrow 786

M. P. MCGARRY, R. S. SPEIRS, V. K. JENKINS, and J. J. TRENTIN. Lymphoid cell dependence of eosinophil response to antigen 801

No. 3, Pt. 2, September 1, 1971

FOREWORD Maclyn McCarty
LIST OF PARTICIPANTS

PAGE

Henry G. Kunkel. General introduction ..... 1 s

IMMUNE COMPLEXES IN EXPERIMENTAL ANIMALS

Curtis B. Wilson and Frank J. Dixon. Quantitation of acute and chronic serum sickness in the rabbit ..... 7 s
Mart Mannik and William P. Arend. Fate of preformed immune complexes in rabbits and rhesus monkeys ..... 19 s
Michael B. A. Oldstone and Frank J. Dixon. Immune complex disease in chronic viral infections ..... 32 s
Abner Louis Notkins. Infectious virus–antibody complexes: interaction with anti-immunoglobulins, complement, and rheumatoid factor ..... 41 s
Norman Talal, Alfred D. Steinberg, Michael E. Jacobs, Thomas M. Chused, and Adi F. Gazdar. Immune cell cooperation, viruses, and antibodies to nucleic acids in New Zealand mice ..... 52 s
Frank J. Dixon, Michael B. A. Oldstone, and Giorgio Tonietti. Pathogenesis of immune complex glomerulonephritis of New Zealand mice ..... 65 s

MEDIATION OF IMMUNOLOGICAL INJURY

Charles G. Cochrane. Mechanisms involved in the deposition of immune complexes in tissues ..... 75 s
Otto Götze and Hans J. Müller-Eberhard. The C3-activator system: an alternate pathway of complement activation ..... 90 s
Peter A. Ward. Complement-derived leukotactic factors in pathological fluids ..... 109 s
Peter M. Henson. Interaction of cells with immune complexes: adherence, release of constituents, and tissue injury ..... 114 s
Robert P. Orange, W. Gerald Austen, and K. Frank Austen. Immunological release of histamine and slow-reacting substance of anaphylaxis from human lung. I. Modulation by agents influencing cellular levels of cyclic 3′,5′-adenosine monophosphate ..... 136 s
Gerald Weissmann, Robert B. Zurier, Paul J. Spieler, and Ira M. Goldstein. Mechanisms of lysosomal enzyme release from leukocytes exposed to immune complexes and other particles ..... 149 s

IMMUNE COMPLEXES AND GLOMERULONEPHRITIS IN MAN

PAGE

D. Koffler, V. Agnello, R. Thoburn, and H. G. Kunkel. Systemic lupus erythematosus: prototype of immune complex nephritis in man ..... 169 s

John B. Zabriskie. The role of streptococci in human glomerulonephritis ..... 180 s

F. Milgrom, J. Klassen, and H. Fuji. Immunologic injury of renal homografts ..... 193 s

Alfred F. Michael, N. Gunnar Westberg, Alfred J. Fish, and Robert L. Vernier. Studies on chronic membranoproliferative glomerulonephritis with hypocomplementemia ..... 208 s

V. Agnello, D. Koffler, J. W. Eisenberg, R. J. Winchester, and H. G. Kunkel. C1q precipitins in the sera of patients with systemic lupus erythematosus and other hypocomplementemic states: characterization of high and low molecular weight types ..... 228 s

Robert T. McCluskey. The value of immunofluorescence in the study of human renal disease ..... 242 s

RHEUMATOID ARTHRITIS AND OTHER DISEASES

Shaun Ruddy, Lloyd K. Everson, Peter H. Schur, and K. Frank Austen. Hemolytic assay of the ninth complement component: elevation and depletion in rheumatic diseases ..... 259 s

Nathan J. Zvaifler. Immunoreactants in rheumatoid synovial effusions ..... 276 s

R. J. Winchester, H. G. Kunkel, and V. Agnello. Occurrence of γ-globulin complexes in serum and joint fluid of rheumatoid arthritis patients: use of monoclonal rheumatoid factors as reagents for their demonstration ..... 286 s

Eric R. Hurd, T. Douglas Kinsella, and Morris Ziff. Immunohistologic studies of synoviocytes and synovial exudate cells ..... 296 s

Carol A. Smith. Properties of synovial cells in culture ..... 306 s

Paul E. Phillips. Virologic studies in rheumatoid arthritis and other connective tissue diseases ..... 313 s

Baruch S. Blumberg, Irving Millman, Alton I. Sutnick, and W. Thomas London. The nature of Australia antigen and its relation to antigen-antibody complex formation ..... 320 s

David J. Gocke, Konrad Hsu, Councilman Morgan, Stepheno Bombardieri, Michael Lockshin, and Charles L. Christian. Vasculitis in association with Australia antigen ..... 330 s

No. 4, October 1, 1971

PAGE

Toshitada Takahashi, Lloyd J. Old, K. Robert McIntire, and Edward A. Boyse. Immunoglobulin and other surface antigens of cells of the immune system 815

Raymond A. McBride and Louis W. Schierman. Passive antibody and the immune response. Factors which determine enhancement and suppression 833

Silvio Baez and Helmut A. Gordon. Tone and reactivity of vascular smooth muscle in germfree rat mesentery 846

Darcy B. Wilson and Dianne H. Fox. Quantitative studies on the mixed lymphocyte interaction in rats. VI. Reactivity of lymphocytes from conventional and germfree rats to allogeneic and xenogeneic cell surface antigens 857

Thomas S. Edgington and Donald J. Ritt. Intrahepatic expression of serum hepatitis virus-associated antigens 871

John Swanson, Stephen J. Kraus, and Emil C. Gotschlich. Studies on gonococcus infection. I. Pili and zones of adhesion: their relation to gonococcal growth patterns 886

Dorothy Ford Bainton, Joan L. Ullyot, and Marilyn G. Farquhar. The development of neutrophilic polymorphonuclear leukocytes in human bone marrow. Origin and content of azurophil and specific granules 907

Saimon Gordon and Zanvil Cohn. Macrophage-melanoma cell heterokaryons. III. The activation of macrophage DNA synthesis. Studies with inhibitors of protein synthesis and with synchronized melanoma cells 935

Saimon Gordon and Zanvil Cohn. Macrophage-melanoma cell heterokaryons. IV. Unmasking the macrophage-specific membrane receptor 947

J. B. Hobbs and W. J. Cliff. Observations on tissue grafts established in rabbit ear chambers. A combined light and electron microscopic study 963

C. G. Cochrane and K. D. Wuepper. The first component of the kinin-forming system in human and rabbit plasma. Its relationship to clotting factor XII (Hageman factor) 986

Arthur D. Bankhurst, Noel L. Warner, and John Sprent. Surface immunoglobulins on thymus and thymus-derived lymphoid cells 1005

Min-Fu Tsan and Richard D. Berlin. Effect of phagocytosis on membrane transport of nonelectrolytes 1016

W. P. McArthur, J. Chapman, and G. J. Thorbecke. Immuno-

PAGE

competent cells of the chicken. I. Specific surface antigenic markers on bursa and thymus cells 1036

DOV THEO GOLAN and YVES BOREL. Nonantigenicity and immunologic tolerance: the role of the carrier in the induction of tolerance to the hapten 1046

HAIM GINSBURG, NURIT HOLLANDER, and MICHAEL FELDMAN. The development of hypersensitive lymphocytes in cell culture 1062

NO. 5, NOVEMBER 1, 1971

HANSRUEDY RAMSEIER and JEAN LINDENMANN. Cellular receptors. Effects of anti-alloantiserum on the recognition of transplantation antigens 1083

M. R. PANDIAN and G. P. TALWAR. Effect of growth hormone on the metabolism of thymus and on the immune response against sheep erythrocytes 1095

BABETTE B. WEKSLER and R. L. NACHMAN. Rabbit platelet bactericidal protein 1114

RALPH SNYDERMAN, JEAN K. PHILLIPS, and STEPHAN E. MERGENHAGEN. Biological activity of complement in vivo. Role of C5 in the accumulation of polymorphonuclear leukocytes in inflammatory exudates 1131

DAVID G. TUBERGEN and JOSEPH D. FELDMAN. The role of thymus and bone marrow cells in delayed hypersensitivity 1144

FRED G. GUDAT, T. N. HARRIS, SUSANNA HARRIS, and KLAUS HUMMELER. Studies on antibody-producing cells. III. Identification of young plaque-forming cells by thymidine-^{3}H labeling 1155

DAVID L. ROSENSTREICH, J. THOMAS BLAKE, and ALAN S. ROSENTHAL. The peritoneal exudate lymphocyte. I. Differences in antigen responsiveness between peritoneal exudate and lymph node lymphocytes from immunized guinea pigs 1170

SAIMON GORDON, CAROLYN S. RIPPS, and ZANVIL COHN. The preparation and properties of macrophage–L cell hybrids 1187

R. M. GORCZYNSKI, R. G. MILLER, and R. A. PHILLIPS. In vivo requirement for a radiation-resistant cell in the immune response to sheep erythrocytes 1201

JEAN DAUSSET, FELIX T. RAPAPORT, FRANCES D. CANNON, and JOSEPH W. FERREBEE. Histocompatibility studies in a closely bred colony of dogs. III. Genetic definition of the DL-A system of canine histocompatibility, with particular reference to the comparative immunogenicity of the major transplantable organs 1222

WILLIAM J. KLEIN, JR. Lymphocyte-mediated cytotoxicity in vitro. Effect of enhancing antisera 1238

PAGE

ARTIN H. MALAKIAN and JOHN H. SCHWAB. Biological characterization of an immunosuppressant from Group A streptococci 1253

J. F. A. P. MILLER, J. SPRENT, A. BASTEN, N. L. WARNER, J. C. S. BREITNER, G. ROWLAND, J. HAMILTON, H. SILVER, and W. J. MARTIN. Cell-to-cell interaction in the immune response. VII. Requirement for differentiation of thymus-derived cells 1266

COLIN BIRD and CHARLES HUGGINS. Leukemia evoked with 7,8,12-trimethylbenz(a)anthracene in rat. I. Changes in spleen and thymus 1285

JIRI ROTTA, RICHARD M. KRAUSE, REBECCA C. LANCEFIELD, WILLIAM EVERLY, and HENRY LACKLAND. New approaches for the laboratory recognition of M types of Group A streptococci 1298

REUBEN BAUMAL, MICHAEL POTTER, and MATTHEW D. SCHARFF. Synthesis, assembly, and secretion of gamma globulin by mouse myeloma cells. III. Assembly of the three subclasses of IgG 1316

NELSON M. VAZ, JULIA M. PHILLIPS-QUAGLIATA, BERNARD B. LEVINE, and EDA M. VAZ. *H–2*-linked genetic control of immune responsiveness to ovalbumin and ovomucoid 1335

CHULL S. SONG, HAROLD L. MOSES, ALAN S. ROSENTHAL, NANCY A. GELB, and ATTALLAH KAPPAS. The influence of postnatal development on drug-induced hepatic porphyria and the synthesis of cytochrome P-450. A biochemical and morphological study 1349

No. 6, DECEMBER 1, 1971

ROBERT E. CONE, JOHN J. MARCHALONIS, and RONALD T. ROLLEY. Lymphocyte membrane dynamics. Metabolic release of cell surface proteins 1373

PIERRE GOLSTEIN, ERIK A. J. SVEDMYR, and HANS WIGZELL. Cells mediating specific in vitro cytotoxicity. I. Detection of receptor-bearing lymphocytes 1385

ALBERT L. SULLIVAN, PHILIP M. GRIMLEY, and HENRY METZGER. Electron microscopic localization of immunoglobulin E on the surface membrane of human basophils 1403

MICHAEL S. SIMBERKOFF and PETER ELSBACH. The interaction in vitro between polymorphonuclear leukocytes and mycoplasma 1417

ROBERT W. ROSENSTEIN, ALFRED NISONOFF, and JONATHAN W. UHR. Significance of bivalence of antibody in viral neutralization 1431

STANFIELD ROGERS. Change in the structure of Shope papilloma virus-induced arginase associated with mutation of the virus 1442

T. L. FELDBUSH and J. L. GOWANS. Antigen modulation of the immune response. The effect of delayed challenge on the affinity of anti-

PAGE

dinitrophenylated bovine gamma globulin antibody produced in adoptive recipients 1453

IRMA GIGLI, ALLEN P. KAPLAN, and K. FRANK AUSTEN. Modulation of function of the activated first component of complement by a fragment derived from serum. I. Effect on early components of complement 1466

ROBERT J. NORTH. The action of cortisone acetate on cell-mediated immunity to infection. Suppression of host cell proliferation and alteration of cellular composition of infective foci 1485

HIDEAKI MIZOGUCHI and RICHARD D. LEVERE. Enhancement of heme and globin synthesis in cultured human marrow by certain 5β-H steroid metabolites 1501

GUSTAVO CUDKOWICZ and MICHAEL BENNETT. Peculiar immunobiology of bone marrow allografts. II. Rejection of parental grafts by resistant F_1 hybrid mice 1513

HARRY G. BLUESTEIN, LEONARD ELLMAN, IRA GREEN, and BARUJ BENACERRAF. Specific immune response genes of the guinea pig. III. Linkage of the GA and GT immune response genes to histocompatibility genotypes in inbred guinea pigs 1529

HARRY G. BLUESTEIN, IRA GREEN, and BARUJ BENACERRAF. Specific immune response genes of the guinea pig. IV. Demonstration in random-bred guinea pigs that responsiveness to a copolymer of L-glutamic acid and L-tyrosine is predicated upon the possession of a distinct strain 13 histocompatibility specificity 1538

ZENA WERB and ZANVIL A. COHN. Cholesterol metabolism in the macrophage. I. The regulation of cholesterol exchange 1545

ZENA WERB and ZANVIL A. COHN. Cholesterol metabolism in the macrophage. II. Alteration of subcellular exchangeable cholesterol compartments and exchange in other cell types 1570

THEODORE S. ZIMMERMAN, CARLOS M. ARROYAVE, and HANS J. MÜLLER-EBERHARD. A blood coagulation abnormality in rabbits deficient in the sixth component of complement (C6) and its correction by purified C6 1591

THEODORE S. ZIMMERMAN and HANS J. MÜLLER-EBERHARD. Blood coagulation initiation by a complement-mediated pathway 1601

INDEX TO VOLUME 134 1609